### New England Fertilizer Company MWRA, Quincy Ma. Facility

Data Sheet # 19 - Inlet and Outlet Average Daily Temperatures

01-2020.xls

Data Sheet # 20 - Inlet and Outlet Average Daily Temperatures

	Trai	in #1	Trai	in #2	Tra	nin #3	Tra	in #4	
D									D
a	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	a
t	Temp	Temp	Temp	Temp	Temp	Temp	Temp	Temp	t
e			4000	201					e
1			1039	201					1
2			1004 1007	200 200					2
3			926	200					4
5			920	202					5
6			904	200					6
7			1168	205					7
8			1154	201					8
9			1171	203					9
10			1238	202					10
11			1151	212					11
12									12
13	851	198	998	200					13
14	826	199	991	204					14
15	965	201	961	203					15
16	1090	201	1129	202					16
17	991	203	1161	205					17
18									18
19									19
20	454	201	1145	202					20
21	758	200	1086	204					21
22	1050	201	1168	203					22
23	925	200	1059	202					23
24	1014	200	1120	199					24
25									25
26 27	842	200					517	203	26 27
28	986	199	1191	204			517	203	28
29	962	200	1144	204					29
30	894	198	1137	205					30
31	1053	200	1140	205					31
Tot									Tot
Avg	911	200	1091	203			517	203	Avg
Min	454	198	904	199			517	203	Min
Max	1090	203	1238	212			517	203	Max

	Traii	n #5	Traii	n #6				Railroad	
D							Silo Sheet	Tons	D
a	Inlet	Outlet	Inlet	Outlet	Nitrogen	Dust control	Dust control	Pellets	a
t	Temp	Temp	Temp	Temp	Usage	Usage	Usage	Loaded Out	t
e									e
1			1119	205					1
2	1240	200	978	205		423.00			2
3	1193	203	952	201		323.00			3
4	1415	202	967	202		12.00			4
5									5
6	1226	203	907	202		564.00			6
7	1369	203	920	202		780.00			7
8	1336	202	894	200		412.00			8
9	1332	205	955	202		229.00			9
10	1332	203	1198	200		188.00			10
11	1251	202	1229	204					11
12									12
13			1223	202		723.00			13
14			1168	202		747.00			14
15			1285	203		365.00			15
16	1278	202	1251	207					16
17	1317	203							17
18									18
19									19
20			1262	201					20
21			1243	202					21
22			1165	201					22
23			1141	205		165.00			23
24			1198	201		600.00			24
25									25
26									26
27			1235	202		235.00			27
28			1251	202		88.00			28
29			1198	205		270.00			29
30			1186	202		119.29			30
31									31
Tot						6,243			Tot
A	1200	202	1127	202					
Avg	1299	203	1127	203					Avg
NA:	4400	202	20.1	202					
Min	1193	200	894	200					Min
Mass	1415	205	1205	207					Mess
Max	1415	205	1285	207					Max

New England Fertilizer Company MWRA, Quincy Ma. Facility

Data Sheet # 20 - Inlet and Outlet Average Daily Temperatures

 $02\text{--}2020.\mathbf{xls}$ 

Data Sheet # 19 - Inlet and Outlet Average Daily Temperatures

	T	- 44	T	- #2	T	·- #2	T	·- #4	
D	Trai	n #1	Trail	n #2	Trai	in #3	l ra.	in #4	D
a	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	a
t	Temp	Temp	Temp	Temp	Temp	Temp	Temp	Temp	t
e	remp	remp	remp	remp	remp	remp	remp	remp	e
1	819	202	1067	207					1
2	1030	202	1234	203					2
3	1066	201	1186	204					3
4	975	202	1012	204					4
5	964	203	1064	208					5
6	785	199	997	202					6
7	1013	200	1192	203					7
8									8
9									9
10	929	202							10
11	910	203	1010	204					11
12	830	205							12
13	834	202							13
14	930	202							14
15									15
16									16
17			927	201					17
18			998	203					18
19			1097	206					19
20			1108	201					20
21			1038	202					21
22									22
23			1052	200					23
24			1052	200					24
25			988 1110	200					25 26
26 27			1110	198 200					27
28			1054	200					28
29			1034	201					29
30									30
31									31
Tot									Tot
Avg	924	202	1070	203					Avg
Min	785	199	927	198					Min
Max	1066	205	1234	208					Max

	Train #5		Traii	n #6		Railroad			
D							Silo Sheet	Tons	D
a	Inlet	Outlet	Inlet	Outlet	Nitrogen	Dust control	Dust control	Pellets	а
t	Temp	Temp	Temp	Temp	Usage	Usage	Usage	Loaded Out	t
e									e
1									1
2									2
3						218.00			3
4						500.00			4
5	661	203				435.00			5
6	1434	199				194.00			6
7	1268	203				12.00			7
8									8
9									9
10	1144	203	1098	202		376.00			10
11	1116	206	1214	205		259.00			11
12	1349	204	1304	201		694.00			12
13	1332	203	1235	205		512.00			13
14	1258	204	1258	201		41.00			14
15									15
16	4000		4004	201		=0.4.00			16
17	1207	205	1234	201		794.00			17
18	1207	200	1162	204		835.00			18
19	1427	201	1229	205		329.00			19
20	1414	204	1187	201		759.00			20
21	1370	203	1039	202		53.00			21 22
22 23									23
24	1200	198	1167	201		725.00			23
25	1342	200	1116	201		294.00			25
26	1260	200	1208	200		417.00			26
27	1285	202	1248	203		194.43			27
28	1203	203	1211	201		151.15			28
29			1211	201					29
30									30
31									31
-									
Tot						7,641			Tot
						.,011			
Avg	1251	202	1194	202					Avg
9									. 5
Min	661	198	1039	200					Min
Max	1434	206	1304	205					Max

New England Fertilizer Company MWRA, Quincy Ma. Facility

Data Sheet # 19 - Inlet and Outlet Average Daily Temperatures

03-2020.xls

Data Sheet # 20 - Inlet and Outlet Average Daily Temperatures

 $03\text{-}2020.\mathbf{xls}$ 

	Trai	in #1	Trail	n #2	Trai	in #3	Trai	in #4	_
D									D
а	<i>Inlet</i>	Outlet	<i>Inlet</i>	Outlet	Inlet	Outlet	<i>Inlet</i>	Outlet	a
t	Temp	Temp	Temp	Temp	Temp	Temp	Temp	Temp	t
<i>e</i>									<i>e</i>
1									1
2							583	202	2
4							621	202	4
5							646	201	5
6			1047	200	469	208	709	200	6
7			968	200	705	200	703	200	7
8			1092	203					8
9			1092	204					9
10			1098	201					10
11			998	202			465	203	11
12			944	201					12
13			990	202					13
14			1004	203					14
15									15
16			939	204	655	198	490	199	16
17			984	199	852	201	498	199	17
18			877	202					18
19			912	201					19
20			1045	204					20
21			1004	202					21
22									22
23			1058	201					23
24			954	201					24
25			1046	202					25
26			1121	202	686	202			26
27			1066	207	793	202			27
28									28
29									29
30			1050	204	712	202			30
31			1041	206	760	201			31
Tot									Tot
١.				20-					
Avg			1011	202	704	202	573	201	Avg
NA:			077	100	460	100	465	100	M
Min			877	199	469	198	465	199	Min
Max			1121	207	852	208	709	203	Max

	Trail	n #5	Traii	n #6				Railroad	
D							Silo Sheet	Tons	D
а	Inlet	Outlet	Inlet	Outlet	Nitrogen	Dust control	Dust control	Pellets	а
t	Temp	Temp	Temp	Temp	Usage	Usage	Usage	Loaded Out	t
e									e
1									1
2	1294	201	1168	201		1041.00			2
3	1380	202	1243	201		223.00			3
4	1283	199	1255	202		694.00			4
5	1319	200	1237	201		370.00			5
6	1010	197	1213	200		112.00			6
7	1256	202	1153	200		336.00			7
8	1248	204	1232	200					8
9									9
10	1196	202	1269	198					10
11	1246	203	1192	203					11
12	812	208	1122	200					12
13	1243	202	1145	203					13
14	1263	203	1158	201					14
15									15
16			882	202					16
17			1203	202					17
18	1234	203	1270	200					18
19	1326	205	1329	200					19
20	1213	204	1231	204					20
21	1268	200	1218	201					21
22									22
23	1332	202	1246	199					23
24	1230	200	1236	199					24
25	1365	200	1295	199					25
26	1338	206	1269	200					26
27			1314	201					27
28									28
29									29
30			1237	197					30
31			1204	201					31
Tot						2,776			Tot
Avg	1243	202	1213	201					Avg
Min	812	197	882	197					Min
Max	1380	208	1329	204					Max

New England Fertilizer Company MWRA, Quincy Ma. Facility

Data Sheet # 19 - Inlet and Outlet Average Daily Temperatures

04-2020.xls

Data Sheet # 20 - Inlet and Outlet Average Daily Temperatures

04-2020.xls

	Trail	in #1	Trail	n #2	Trai	in #3	Tra	in #4	
D									D
a	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	a
t	Temp	Temp	Temp	Temp	Temp	Temp	Temp	Temp	t
e									e
1			1124	200	782	200			1
2			1132	205	757	201			2
3			1107	206	823	202			3
4									4
5									5
6			1080	204	908	200			6
7			1008	205	687	202			7
8			1127	201	798	201			8
9	546	203	1051	202	806	201			9
10	635	200	1098	197	663	202			10
11									11
12									12
13	583	204			872	201			13
14	605	199			758	201			14
15	694	201			806	199			15
16	590	201			823	199			16
17	541	202			818	200			17
18									18
19									19
20	613	202			806	200			20
21	736	203			795	200			21
22	725	200			795	201			22
23	743	201			747	200			23
24	776	200			742	200			24
25									25
26	650	201			600	201			26
27	659	201			698	201			27
28	598	201			754	201			28
29	649	200			823	202			29
30	683	201			838	202			30
31									31
Tot									Tot
۸٠٠-	640	201	1001	202	700	304			A
Avg	649	201	1091	203	786	201			Avg
No:	F41	100	1000	407		100			\
Min	541	199	1008	197	663	199			Min
Marr	776	204	1122	206	000	202			Max
Max	776	204	1132	206	908	202			Max

	Train #5		Traii	n #6				Railroad	
D							Silo Sheet	Tons	D
а	Inlet	Outlet	Inlet	Outlet	Nitrogen	Dust control	Dust control	Pellets	а
t	Temp	Temp	Temp	Temp	Usage	Usage	Usage	Loaded Out	t
e									e
1			1255	201		506.00			1
2			1260	202		241.00			2
3			1306	203		265.00			3
4									4
5									5
6			1223	197		423.00			6
7			1247	205		523.00			7
8			1239	206		171.00			8
9			1278	203		453.00			9
10									10
11									11
12									12
13	1302	197	1120	201		1194.00			13
14	1337	203	1264	205		76.00			14
15	1326	204				459.00			15
16	1246	206							16
17	1218	199				82.00			17
18									18
19									19
20	1293	202				1008.00			20
21	1321	204				412.00			21
22	1348	202				482.00			22
23	1280	202				118.00			23
24	1301	206							24
25									25
26									26
27			1155	204		259.00			27
28	1050	200	1176	204		270.00			28
29	1043	206	1223	202		241.33			29
30			1299	202		957.00			30
31									31
<b>-</b> .						0.440			<b>.</b> .
Tot						8,140			Tot
A	1355	303	1224	303					A
Avg	1255	203	1234	203					Avg
NA:	1010	107	1100	107					
Min	1043	197	1120	197					Min
Max	1240	200	1200	200					Mass
Max	1348	206	1306	206					Max

New England Fertilizer Company MWRA, Quincy Ma. Facility

Data Sheet # 19 - Inlet and Outlet Average Daily Temperatures

05-2020.xls

Data Sheet # 20 - Inlet and Outlet Average Daily Temperatures

 $05\text{--}2020.\mathbf{xls}$ 

	Trai	in #1	Trai	in #2	Trai	in #3	Tra	in #4	_
D									D
a	<i>Inlet</i>	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	a
t	Temp	Temp	Temp	Temp	Temp	Temp	Temp	Temp	t
<i>e</i>	709	200			015	198			<i>e</i>
1 2	709	200			915	198			1 2
3									3
4	705	201			792	203			4
5	593	201			817	200			5
6	680	201			762	201			6
7	735	201	513	205	699	201			7
8	, 55	201	010	200	033	201			8
9									9
10									10
11			942	196	780	200			11
12			910	199	835	199			12
13			968	203	678	200			13
14			980	204	765	199			14
15									15
16									16
17									17
18			864	200	683	200			18
19			856	200	787	199			19
20			930	199	734	202			20
21			891	202	837	200			21
22			932	199	818	198			22
23									23
24									24
25	726	106	0.43	201	004	204			25
26	726 753	196	943 906	201 199	804 850	204 203			26
27 28	753 775	201 200	895	199	828	199			27 28
29	7/3	198	842	201	840	201			29
30	709	190	042	201	040	201			30
31									31
"									1 1
Tot									Tot
100									
Avg	709	200	884	201	790	200			Avg
١									
Min	593	196	513	196	678	198			Min
Max	775	202	980	205	915	204			Max

	Trai	in #5	Traii	n #6				Railroad	
D							Silo Sheet	Tons	D
a	Inlet	Outlet	Inlet	Outlet	Nitrogen	Dust control	Dust control	Pellets	a
t	Temp	Temp	Temp	Temp	Usage	Usage	Usage	Loaded Out	t
e									e
1			1358	200					1
2									2
3									3
4			1098	204		1405.00			4
5			1286	204		1094.00			5
6			1253	203		947.00			6
7			1349	201		388.00			7
8									8
9									9
10									10
11			1251	202					11
12			1381	203		1482.00			12
13			1272	203		653.00			13
14			1280	202		441.00			14
15									15
16									16
17									17
18			1104	205		347.00			18
19			1272	201		429.00			19
20			1291	204		100.00			20
21			1312	200		112.00			21
22			1172	203		12.00			22
23									23
24									24
25			4405	100		F06.00			25
26			1195	198		506.00			26
27						306.00			27
28						400.00			28
29						658.48			29
30									30 31
31									21
Tet						0.200			Tab
Tot						9,280			Tot
Avg			1258	202					Avg
9			1230	202					9
Min			1098	198					Min
Max			1381	205					Max

## New England Fertilizer Company MWRA, Quincy Ma. Facility

Data Sheet # 19 - Inlet and Outlet Average Daily Temperatures

06-2020.xls

Data Sheet # 20 - Inlet and Outlet Average Daily Temperatures

	Trail	in #1	Trai	in #2	Trai	in #3	Tra	in #4	_
D									D
а	<i>Inlet</i>	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	a
t	Temp	Temp	Temp	Temp	Temp	Temp	Temp	Temp	t
e	02.4	407	F70	200	F02	407			<i>e</i>
1	824	197	573	209	592	197			1
2	638 617	198 199			954 807	201 200			2
3	715	200	٥٢٢	201		200			3
4 5	/15	200	955	201	905	202			5
6									6
7									7
8	630	200	942	203	874	198			8
9	709	200	1003	200	938	201			9
10	664	201	927	203	872	202			10
11	660	199	950	200	843	201			11
12	739	197	932	200	876	199			12
13									13
14									14
15	701	199	732	200	786	200			15
16	696	202	958	200	951	199			16
17	716	201	858	200	848	201			17
18	687	202	901	200	896	200			18
19									19
20									20
21									21
22	711	199	898	200	841	199			22
23	747	199	1004	200	929	200			23
24			953	201	881	200			24
25			1052	198	885	200			25
26									26
27									27
28									28
29			795	201	881	195			29
30			962	199	851	201			30
31									31
T-4									T-+
Tot									Tot
Avg	697	200	906	201	864	200			Avg
Avy	09/	200	900	201	004	200			Avy
Min	617	197	573	198	592	195			Min
1-1111	017	137	3/3	130	332	193			1:4111
Max	824	202	1052	209	954	202			Max

	Trail	n #5	Traii	n #6				Railroad	
D							Silo Sheet	Tons	D
a	Inlet	Outlet	Inlet	Outlet	Nitrogen	Dust control		Pellets	а
t	Temp	Temp	Temp	Temp	Usage	Usage	Usage	Loaded Out	t
e									e
1	1361	196				564.00			1
2	1328	201				318.00			2
3	991	207				435.00			3
4						6.00			4
5									5
6									6
7									7
8						370.00			8
9						118.00			9
10						206.00			10
11						335.00			11
12						335.00			12
13									13
14									14
15						353.00			15
16						591.00			16
17									17
18									18
19									19
20									20
21									21
22									22
23			1328	198					23
24			1383	204					24
25			1416	201					25
26									26
27									27
28									28
29			1276	194		1123.00			29
30			1413	203		530.43			30
31									31
Tot						5,284			Tot
Δνα	1227	201	1363	200					Δνα
Avg	122/	201	1363	200					Avg
Min	991	196	1276	194					Min
Max	1361	207	1416	204					Max

### New England Fertilizer Company MWRA, Quincy, Ma. Facility

Data Sheet # 19 - Inlet and Outlet Average Daily Temperatures

07-2020.xls

Data Sheet # 20 - Inlet and Outlet Average Daily Temperatures

	Trail	n #1	Trai	in #2	Trai	in #3	Tra	in #4	-
D									D
a	Inlet	Outlet _	Inlet	Outlet -	Inlet	Outlet -	Inlet	Outlet	a
t	Temp	Temp	Temp	Temp	Temp	Temp	Temp	Тетр	t
<i>e</i>			026	200	012	200			<i>e</i>
1 2			936 838	200 200	912 945	200			1 2
3			871	200	983	200 198			3
4			0/1	201	903	190			4
5									5
6			763	200	862	199	714	201	6
7			966	199	933	200	280	200	7
8			1001	202	895	201	200	200	8
9			887	203	714	203			9
10					975	199			10
11									11
12									12
13	712	199			751	203	506	204	13
14	721	200			838	199			14
15	737	200			941	200			15
16	736	201			833	201			16
17	751	201			873	200			17
18									18
19									19
20									20
21	685	202	818	197	884	201	435	201	21
22	680	203	922	200	925	202			22
23	752	202	916	201	884	202			23
24 25	670	202			866	201			24 25
									26
26 27					650	199			27
28	702	202			867	199	488	199	28
29	655	199	569	198	886	198	549	198	29
30	750	201	835	200	813	199		150	30
31	808	200	952	198	909	197			31
Tot									Tot
1									
Avg	720	201	867	200	870	200	495	201	Avg
1									
Min	655	199	569	197	650	197	280	198	Min
1	000	202	1001	200	000	200	=	22.1	l.,
Max	808	203	1001	203	983	203	714	204	Max

	Trai	in #5	Trail	n #6				Railroad	
D							Silo Sheet	Tons	D
a	Inlet	Outlet	Inlet	Outlet	Nitrogen	Dust control		Pellets	a
t	Temp	Temp	Temp	Temp	Usage	Usage	Usage	Loaded Out	t
e									e
1			1391	204		635.00			1
2			1253	206		288.00			2
3			1157	201		512.00			3
4									4
5									5
6			756	201		1023.00			6
7			1112	202		864.00			7
8			1212	204		706.00			8
9			1109	204		629.00			9
10			1161	202					10
11									11
12									12
13			1029	197		429.00			13
14			1159	202		1582.00			14
15			1186	201		694.00			15
16			1099	202		88.00			16
17			1186	197		282.00			17
18									18
19									19
20									20
21						835.00			21
22						494.00			22
23			975	198		488.00			23
24			1163	200		165.00			24
25									25
26									26
27			502	193		582.00			27
28			1089	200		582.00			28
29						206.00			29
30						176.90			30
31									31
T-4						11.201			
Tot						11,261			Tot
A			1001	204					
Avg			1091	201					Avg
M:			F03	103					N4:
Min			502	193					Min
Max			1201	200					Max
Max			1391	206			l		Max

New England Fertilizer Company MWRA, Quincy Ma. Facility

Data Sheet # 19 - Inlet and Outlet Average Daily Temperatures

08-2020.xls

Data Sheet # 20 - Inlet and Outlet Average Daily Temperatures

 $08\text{-}2020.\mathbf{xls}$ 

	Trai	in #1	Trail	in #2	Trai	in #3	Trai	in #4	
D									D
a	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	a
t	Temp	Temp	Temp	Temp	Temp	Temp	Temp	Temp	t
e									e
1									1
2									2
3	706	200			868	200			3
4	673	200			892	199			4
5	682	198			858	197			5
6	705	200	749	200	729	200	470	198	6
7	732	201			883	200			7
8	862	198			884	200			8
9									9
10	734	199			736	198	562	206	10
11	713	199			708	202			11
12	743	199			897	199			12
13	753	200			909	200			13
14									14
15									15
16									16
17	774	200			844	196	433	197	17
18	743	201			937	200	503	200	18
19	735	198			1028	199	499	205	19
20	758	198			972	198	520	202	20
21	752	199			993	200	525	204	21
22									22
23									23
24	690	199			976	196	461	204	24
25	780	198			948	201	450	203	25
26	816	200			963	202	549	200	26
27	836	199			966	199	538	204	27
28	785	202			964	201	520	204	28
29	798	201			1006	199	518	202	29
30	790	199			979	199	524	206	30
31									31
T-4									T-4
Tot									Tot
Ave	752	100	740	200	006	100	FOF	202	Ave
Avg	753	199	749	200	906	199	505	203	Avg
Min	672	100	740	200	700	100	422	107	Min
Min	673	198	749	200	708	196	433	197	Min
Max	862	202	749	200	1028	202	562	206	Max

	Trail	n #5	Traii	1 #6				Railroad	
D							Silo Sheet	Tons	D
a	Inlet	Outlet	Inlet	Outlet	Nitrogen	Dust control	Dust control	Pellets	a
t	Temp	Temp	Temp	Temp	Usage	Usage	Usage	Loaded Out	t
e									e
1									1
2									2
3			1123	204		588.00			3
4			1237	202		312.00			4
5			1216	201		82.00			5
6			1193	203		141.00			6
7			1251	202					7
8			1048	202					8
9									9
10						212.00			10
11			882	198		300.00			11
12			1162	202		376.00			12
13			1198	202		47.00			13
14									14
15									15
16									16
17						994.00			17
18						282.00			18
19						276.00			19
20						1952.00			20
21						141.00			21
22									22
23						4005.00			23
24						1305.00			24
25						1311.00			25
26						641.00			26
27						817.00			27
28						194.00			28
29									29
30 31									30 31
31									31
Tot						9,971			Tot
Tot						9,9/1			Tot
Avg			1146	202					Avg
Avy			1170	202					Avy
Min			882	198					Min
Pilli			002	150					19111
Max			1251	204					Max

## New England Fertilizer Company MWRA, Quincy Ma. Facility

Data Sheet # 19 - Inlet and Outlet Average Daily Temperatures

09-2020.xls

Data Sheet # 20 - Inlet and Outlet Average Daily Temperatures

09-2020.xls

	Trail	n #1	Trail	in #2	Trai	in #3	Trai	in #4	_
D									D
а	<i>Inlet</i>	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	a
t	Temp	Temp	Temp	Temp	Temp	Temp	Temp	Temp	t
e	676	201	=40	202	000	201	=0.6	204	<i>e</i>
1	656	201	512	202	828	204	536	204	1
2	762	201			819	196	515	208	2
3	787	200			965	202	518	205	3
4	710	201			1002	201	547	202	4
5									5 6
6 7									7
8	719	203			071	200	541	205	8
9	719	203			871 1029	200 200	537	203	9
10	795	200	966	200	1029	200	562	203	10
11	781	201	995	200	994	202	302	202	11
12	701	201	333	200	331	202			12
13									13
14	807	205	965	200	962	201			14
15	860	205	1028	199	1058	200	500	204	15
16	875	202	1000	202	1030	200	575	202	16
17	824	206	945	202			561	204	17
18	732	204	900	200			535	202	18
19									19
20									20
21									21
22	735	204	704	200	734	200			22
23	903	203	1020	201	960	199			23
24	849	202	1020	200	951	199			24
25	868	207	990	199	1015	200			25
26									26
27									27
28	759	204	829	200	966	199			28
29	875	205	984	199	970	200			29
30	868	202	987	200	1011	198			30
31									31
Tot									Tot
Avg	796	203	923	200	949	200	539	204	Avg
NA:		200	F42	100	70.4	100	F00	202	NA:
Min	656	200	512	199	734	196	500	202	Min
Max	903	207	1028	202	1058	204	575	208	Max

	Trai	in #5	Traii	n #6				Railroad	
D							Silo Sheet	Tons	D
a	Inlet	Outlet	Inlet	Outlet	Nitrogen	Dust control		Pellets	a
t	Temp	Temp	Temp	Temp	Usage	Usage	Usage	Loaded Out	t
e									e
1						1064.00			1
2						1194.00			2
3						512.00			3
4						76.00			4
5									5
6									6
7									7
8						212.00			8
9						794.00			9
10						482.00			10
11						71.00			11
12									12
13									13
14						500.00			14
15						294.00			15
16						347.00			16
17						265.00			17
18						229.00			18
19						223.00			19
20									20
21									21
22						1453.00			22
23						265.00			23
24						171.00			24
25						318.00			25
						310.00			
26 27									26 27
28						204.00			28
						394.00 394.00			
29 30									29
31						400.00			30 31
31									31
<b>.</b>					ļ	0.43-			<b>.</b>
Tot						9,435			Tot
Avg									Avg
									l l
Min									Min
Max									Max

## New England Fertilizer Company MWRA, Quincy Ma. Facility

Data Sheet #19 - Inlet and Outlet Average Daily Temperatures

10-2020.xls

Data Sheet # 20 - Inlet and Outlet Average Daily Temperatures

	Trail	n #1	Trail	in #2	Trai	in #3	Trai	in #4	
D			- 4 .				- 4 -		D
a	Inlet Temp	Outlet Temp	Inlet	Outlet Temp	Inlet	Outlet Temp	Inlet	Outlet Temp	a
t	Теттр	Теттр	Temp	теттр	Temp	тетр	Temp	remp	t
<b>e</b> 1	852	202	986	197	982	202			<b>e</b> 1
2	032	202	300	197	302	202			2
3									3
4									4
5	755	204	558	204	788	199			5
6	823	203	976	201	817	201			6
7	786	199	937	201	866	199			7
8	798	200	1059	200	1052	199	518	201	8
9	774	197	1063	201	1075	198	526	203	9
10									10
11									11
12	735	208	868	199	906	198			12
13	883	202	846	199	1083	200			13
14	869	201	913	199	1009	200			14
15	868	201			1004	198			15
16	871	204			1023	202			16
17									17
18									18
19			826	202	969	200			19
20			871	200	978	198			20
21			930	197	893	197			21
22			875	200	855	197			22
23									23
24									24
25	809	205	926	200	895	106			25
26 27	809 858	205 203	926	200	895 896	196 200			26 27
28	876	198	1009	200	950	198			28
29	5/0	190	898	202	929	197			29
30			030	202	323	137			30
31									31
									1
Tot									Tot
Avg	826	202	914	200	946	199	522	202	Avg
Min	735	197	558	197	788	196	518	201	Min
Max	883	208	1063	204	1083	202	526	203	Max

D     Silo Sheet       a     Inlet     Outlet     Nitrogen     Dust control     Dust control	Railroad         Tons       D         Pellets       a         Loaded Out       t         e       1         2       3         4       5         6       7
t         Temp         Temp         Temp         Usage         Usage         Usage         L           e         1         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00         135.00	Loaded Out     t       e     1       2     3       4     5       6     6
1 1 2 135.00 135.00 2 1 135.00 2 2 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	e 1 2 3 4 5
1	1 2 3 4 5 6
2 3 4 5 5 6 6 7 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	2 3 4 5 6
3 4 5 5 5 541.00 6 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	3 4 5 6
5 5 541.00 194.00 7 306.00 447.00 9 94.00 10 11 122 13 218.00 144 1245 197 165.00 15 1281 203 453.00 16 1254 203 276.00 17 18 19 1198 195 441.00 20 1283 204 318.00 21 1346 201 406.00	4 5 6
5       541.00         6       194.00         7       306.00         8       447.00         9       94.00         10       11         12       218.00         14       1245       197       165.00         15       1281       203       453.00         16       1254       203       276.00         17       18       9       441.00         20       1283       204       318.00         21       1346       201       406.00	5 6
6	6
7 8 306.00 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	
8	7
9	l *
10 11 12 13 14 1245 197 165.00 115 1281 203 453.00 16 1254 203 276.00 17 18 19 1198 1198 199 1198 1198 199 1283 204 318.00 21 1346 201	8
11       12       13       14     1245     197     165.00       15     1281     203     453.00       16     1254     203     276.00       17     20     1198     195     441.00       20     1283     204     318.00       21     1346     201     406.00	9
12	10
13	11
14     1245     197     165.00       15     1281     203     453.00       16     1254     203     276.00       17     18	12
15	13
16     1254     203     276.00       17     18     441.00       19     1198     195     441.00       20     1283     204     318.00       21     1346     201     406.00	14
17 18 19 20 20 21 1346 195 441.00 21 1346 201 406.00	15
18       19     1198     195     441.00       20     1283     204     318.00       21     1346     201     406.00	16
19     1198     195     441.00       20     1283     204     318.00       21     1346     201     406.00	17
20     1283     204       21     1346     201       318.00     406.00	18
21 1346 201 406.00	19
	20
22   1219   202   329.00	21
	22
23	23
24	24
25	25
394.00	26
576.00	27
28 153.00	28
29 35.00	29
30 31 31	30 31
	31
Tal	T-4
Tot 5,481	Tot
Avg 1261 201	Ava
Avg 1261 201	Avg
Min 1198 195	Min
1190	MILL
Max 1346 204	

## New England Fertilizer Company MWRA, Quincy Ma. Facility

Data Sheet # 19 - Inlet and Outlet Average Daily Temperatures

11-2020.xls

Data Sheet # 20 - Inlet and Outlet Average Daily Temperatures

	Trail	n #1	Trail	in #2	Trai	in #3	Trai	in #4	
D									D
а	<i>Inlet</i>	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	a
t	Temp	Temp	Temp	Temp	Temp	Temp	Temp	Temp	t
e									e
1	642	200	046	200	762	400	260	202	1
2	612	208	816	200	763	198	368	202	2
3	825	199	931	199	895	200			3
4	806	199	982	199	941	199			4
5	781 817	201	937 979	200 200	939	200			5
6 7	817	201	9/9	200	954	201			6 7
8									8
9	753	198	913	199	895	198			9
10	787	199	931	199	941	198			10
11	788	199	923	199	946	197			11
12	757	201	904	200	940	197			12
13	, 5,	201	501	200	310	157			13
14									14
15									15
16			972	199	1011	197	448	191	16
17			962	200	1013	198			17
18			1022	199	986	201			18
19			975	199	906	199	259	208	19
20			909	199	963	199			20
21									21
22									22
23	737	199	777	204	904	200			23
24	820	199	1016	201	948	199			24
25	798	201			966	198			25
26									26
27									27
28									28
29	794	198	656	199	878	198			29
30			1048	199	1001	199			30
31									31
Tot									Tot
1.		20-			22-			20-	ا ا
Avg	775	200	925	200	936	199	358	200	Avg
NA:	613	100	656	100	763	107	350	101	N4:
Min	612	198	656	199	763	197	259	191	Min
Max	825	208	1048	204	1013	201	448	208	Max

	Trai	in #5	Traii	n #6				Railroad	
D							Silo Sheet	Tons	D
a	Inlet	Outlet	Inlet	Outlet	Nitrogen	Dust control	Dust control	Pellets	a
t	Temp	Temp	Temp	Temp	Usage	Usage	Usage	Loaded Out	t
e									e
1									1
2						353.00			2
3						259.00			3
4						182.00			4
5						529.00			5
6			962	198		417.00			6
7									7
8									8
9									9
10						153.00			10
11									11
12						47.00			12
13									13
14									14
15			1021	104		100.00			15
16			1021	194		188.00			16
17			1227	203		24.00			17
18			1178	205		294.00			18
19			1033	203		306.00			19
20 21			1022	204					20 21
22 23									22 23
24									24
25									25
26									26
27									27
28									28
29									29
30						106.00			30
31						100.00			31
Tot					1	2,858			Tot
						_,550			
Avg			1074	201					Avg
,									٦
Min			962	194					Min
Max			1227	205					Max

## New England Fertilizer Company MWRA, Quincy Ma. Facility

Data Sheet # 19 - Inlet and Outlet Average Daily Temperatures

12-2020.xls

Data Sheet # 20 - Inlet and Outlet Average Daily Temperatures

Inlet	0.44							
	0 11 1							D
	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	a
Temp	Temp	Temp	Temp	Temp	Temp	Temp	Temp	t
								e
								1
								2
								3
								4
833	200	966	201	1004	201			5
								6
								7
								8
								9
879	198	954	202	1006	200			10
								11
								12
								13
								14
								15
								16
								17
824	201					861	199	18
								19
								20
								21
								22
909	200	1062	201			863	200	23
								24
								25
								26
004	200					00.1	202	27
		4050	200					28
								29
				020	201			30
938	199	1041	202	930	201	812	197	31
								Tat
								Tot
057	200	0.51	200	000	200	000	100	Ave
85/	200	951	200	980	200	900	199	Avg
772	100	720	107	050	106	013	100	Min
//2	198	/39	197	858	196	812	196	Min
1014	201	1074	202	1062	າດາ	090	200	Max
	803 835 773 833 790 832 832 879 772 850 854 843 824 787 889 909 909	835 201 773 201 833 200  790 198 832 198 832 200 879 198  772 200 850 200 854 201 843 200 824 201  787 199 889 200 909 200  891 200 996 199 1014 201 938 199  857 200 772 198	835     201     920       773     201     977       833     200     966       790     198     850       832     198     935       832     200     929       879     198     954       772     200       850     200       854     201       843     200       824     201       787     199     739       889     200     1074       909     200     1062       891     200     1062       891     201     1067       938     199     1041       857     200     951       772     198     739	803       201       828       199         835       201       920       198         773       201       977       200         833       200       966       201         790       198       850       201         832       198       935       198         832       200       929       202         879       198       954       202         772       200       850       200         854       201       843       200         824       201       1074       201         999       200       1074       201         999       200       1062       201         891       200       1062       201         891       200       1067       202         938       199       1041       202         857       200       951       200         772       198       739       197	803       201       828       199       959         835       201       920       198       1007         773       201       977       200       1040         833       200       966       201       1004         790       198       850       201       858         832       198       935       198       969         832       200       929       202       1063         879       198       954       202       1006         772       200       850       200       854       201         843       200       200       889       200       1074       201         909       200       1062       201       201         889       200       1074       201       202         996       199       1038       200       202       930         891       200       1067       202       930         857       200       951       200       980         772       198       739       197       858	803       201       828       199       959       200         835       201       920       198       1007       200         773       201       977       200       1040       199         833       200       966       201       1040       201         790       198       850       201       858       196         832       198       935       198       969       199         832       200       929       202       1063       201         879       198       954       202       1006       200         854       201       843       200       201       889       200       1074       201       909       200       1062       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201       201	803       201       828       199       959       200         835       201       920       198       1007       200         773       201       977       200       1040       199         833       200       966       201       1004       201         790       198       850       201       858       196         832       198       935       198       969       199         832       200       929       202       1063       201         879       198       954       202       1006       200         850       200       864       955       967       884       861         772       200       884       201       884       861       861         787       199       739       200       896       896       980       980         889       200       1074       201       980       863       969       938         996       199       1038       200       930       201       876         938       199       1041       202       930       201       812	803       201       828       199       959       200         835       201       920       198       1007       200         773       201       977       200       1040       199         833       200       966       201       1004       201         790       198       850       201       858       196         832       198       935       198       969       199         832       200       929       202       1063       201         879       198       954       202       1006       200         850       200       954       202       1006       200         854       201       967       199         843       200       884       199         824       201       861       199         889       200       1074       201       980       196         999       200       1062       201       863       200         891       200       938       199       1041       201       930       201       812       197         857       200       951

	Trail	n #5	Trair	n #6		Railroad				
D							Silo Sheet	Tons	D	
a	Inlet	Outlet	Inlet	Outlet	Nitrogen	Dust control	Dust control	Pellets	а	
t	Temp	Temp	Temp	Temp	Usage	Usage	Usage	Loaded Out	t	
e									e	
1						759.00			1	
2						506.00			2	
3						770.00			3	
4						35.00			4	
5									5	
6									6	
7			810	202		394.00			7	
8									8	
9						71.00			9	
10						188.00			10	
11									11	
12									12	
13									13	
14			762	206		676.00			14	
15			1082	197		441.00			15	
16			1316	205		470.00			16	
17			1346	200					17	
18			1176	203		29.00			18	
19									19	
20									20	
21			1076	198		147.00			21	
22						118.00			22	
23									23	
24									24	
25									25	
26									26	
27									27	
28			1068	194					28	
29			1308	200					29	
30						465.00			30	
31						76.00			31	
						]				
Tot					,	5,145			Tot	
Avg			1105	201					Avg	
				45						
Min			762	194					Min	
			10.46	20.5						
Мах			1346	206					Max	





Jan 2020

D	Weigh		Wet							Dens	sities	D
a	Belt Scale	Hours	Tons Per		Dry Tons	Lbs. water	Lbs.	Inlet	Outlet	Loose	Packed	a
t	Wet Tons	Run	Hour	Dry Tons	Per Hour	Evarorated	Per Hour	Temp	Temp	Density	Density	t
e	WCC TOILS	Itali	Hour	Diy ions	T CI TIOUI	Lvaroratea	T CI TIOUI	тетър	тетр	Density	Density	e
1	25.06	16.00	1.57	5.61	0.35	38,081	2,380	834	209	42.03	49.71	1
2	25.00	10.00	1.57	5.01	0.55	30,001	2,300	654	209	72.03	75.71	2
3												3
4												4
5												5
6	24.70	16.10	1.53	5.30	0.33	37,959	2,358	829	209	40.82	48.67	6
7	24.56	16.50	1.49	5.11	0.31	38,081	2,308	824	209	40.99	49.84	7
8	23.39	16.50	1.42	4.79	0.29	36,508	2,213	812	209	41.73	49.94	8
9	21.11	14.90	1.42	4.40	0.30	32,852	2,215	806	209	40.69	50.10	9
10	21.11	11.50	1.12	1.10	0.50	32,032	2,203	000	203	10.05	30.10	10
11												11
12												12
13	22.52	14.70	1.53	5.18	0.35	34,095	2,319	836	209	40.23	49.12	13
14	18.62	12.70	1.47	4.29	0.34	28,187	2,219	819	209	40.04	48.61	14
15	18.69	12.90	1.45	4.45	0.34	28,057	2,175	812	209	42.60	52.02	15
16	13.77	9.00	1.53	3.33	0.37	20,523	2,280	840	209	41.81	50.29	16
17	20.77	3.00	1.55	5.55	0.07		_,	0.0		.2.02	50.25	17
18												18
19												19
20	18.72	12.25	1.53	4.32	0.35	28,197	2,302	803	209	42.30	51.72	20
21	20.90	13.30	1.57	4.69	0.35	31,699	2,383	797	206	40.24	50.90	21
22	19.87	12.60	1.58	4.50	0.36	30,146	2,393	857	209	42.40	50.05	22
23	22.05	14.10	1.56	4.97	0.35	33,612	2,384	860	209	42.97	50.69	23
24							,					24
25												25
26												26
27	21.18	12.30	1.72	4.75	0.39	32,196	2,618	898	209	42.05	49.68	27
28	20.54	12.60	1.63	4.63	0.37	31,169	2,474	861	209	42.14	53.91	28
29	20.65	12.60	1.64	4.69	0.37	31,295	2,484	858	209	40.51	51.18	29
30	21.13	12.50	1.69	4.72	0.38	32,122	2,570	899	209	42.56	49.85	30
31						,	,					31
Tot	357.449	231.55		79.73				14,245.000	3,550.000	706.110	856.280	Tot
Avg	21.026	13.62	1.54	4.690		32,046		837.941	208.824	41.536	50.369	Avg
						, , ,						
Min	13.765	9.00	1.42	3.330	0.29	20,523	2,175		206	40.04	48.61	Min
							, -					
Max	25.062	16.50	1.72	5.610	0.39	38,081	2,618		209	42.97	53.91	Max





Feb.

			_		_							
D	Weigh		Wet								sities	D
a	Belt Scale	Hours	Tons Per		Dry Tons	Lbs. water	Lbs.	Inlet	Outlet	Loose	Packed	a
t	Wet Tons	Run	Hour	Dry Tons	Per Hour	Evarorated	Per Hour	Temp	Temp	Density	Density	t
e												e
1												1
2	22.00	4.40	4.60	- 0-	0.05	25.456	2 444	054	200	40.04	50.65	2
3	23.00	14.40	1.60	5.05	0.35	35,156	2,441	854	209	43.94	50.65	3
4	25.98	16.70	1.56	5.69	0.34	39,805	2,384	845	209	44.02	53.20	4
5	26.01 24.29	16.70 16.00	1.56 1.52	5.76 5.42	0.34 0.34	39,747	2,380	860 850	209 209	43.06 43.10	51.94 52.48	5 6
6	24.29	16.00	1.52	5.42	0.54	37,049	2,316	650	209	43.10	52.46	
7												7 8
8 9												9
10	20.69	14.20	1.46	4.59	0.32	31,487	2,217	802	209	41.42	51.41	10
11	24.34	16.60	1.40	5.51	0.32	36,879	2,217	810	209	40.45	51.41	11
12	25.16	16.70	1.51	5.82	0.35	37,881	2,268	825	209	41.01	51.10	12
13	18.02	12.30	1.47	4.07	0.33	27,311	2,220	813	209	40.77	51.52	13
14	10.02	12.50	1.17	1.07	0.55	27,311	2,220	013	203	10.77	31.32	14
15												15
16												16
17	17.49	12.20	1.43	3.83	0.31	26,703	2,189	779	209	42.23	51.96	17
18	19.05	12.70	1.50	4.18	0.33	29,147	2,295	819	210	42.40	48.48	18
19	22.41	14.50	1.55	4.91	0.34	34,201	2,359	834	210	41.00	49.89	19
20	23.13	14.90	1.55	5.00	0.34	35,442	2,379	827	210	41.16	47.33	20
21												21
22												22
23												23
24	21.44	14.20	1.51	4.40	0.31	33,494	2,359	853	210	41.13	50.35	24
25	20.36	14.40	1.41	4.39	0.30	31,354	2,177	813	210	40.73	49.57	25
26	20.51	14.40	1.42	4.41	0.31	31,609	2,195	826	210	40.86	50.22	26
27	22.10	14.70	1.50	4.83	0.33	33,808	2,300	816	210	38.68	48.45	27
28												28
29												29
30												30
31												31
Tot	353.981	235.60		77.86				13,226.000	3,351.000	665.960	810.400	Tot
Avg	22.124	14.73	1.50	4.866		33,817		826.625	209.438	41.623	50.650	Avg
Min	17.489	12.20	1.41	3.830	0.30	26,703	2,177		209	38.68	47.33	Mir
Max	26.012	16.70	1.60	5.820	0.35	39,805	2,441		210	44.02	53.20	Max





Maech

												_
D	Weigh		Wet								sities	D
a	Belt Scale	Hours	Tons Per		<b>Dry Tons</b>	Lbs. water	Lbs.	Inlet	Outlet	Loose	Packed	a
t	Wet Tons	Run	Hour	Dry Tons	Per Hour	Evarorated	Per Hour	Temp	Temp	Density	Density	t
e												e
1												1
2	19.36	12.40	1.56	4.46	0.36	29,164	2,352	840	210	40.54	49.58	2
3	15.79	10.50	1.50	3.69	0.35	23,658	2,253	818	210	40.63	49.72	3
4	15.90	10.60	1.50	3.70	0.35	23,934	2,258	832	210	41.55	50.36	4
5	15.28	10.00	1.53	3.61	0.36	22,798	2,280	802	210	40.51	48.51	5
6												6
7												7
8	10.10	12.20	4.57	4.26	0.25	20.047	2 270	011	210	44.60	E0 20	8
9	19.10	12.20	1.57	4.26	0.35	29,017	2,378	811	210	41.68	50.28	9
10	20.14	12.60	1.60	4.60	0.37	30,418	2,414	818	210	42.05	50.40	10
11	17.10	10.60	1.61 1.56	3.94	0.37 0.37	25,738	2,428	825	210	43.53 40.13	49.93 49.48	11
12	19.82	12.70	1.50	4.71	0.37	29,666	2,336	829	210	40.13	49.48	12 13
13 14												14
15												15
16	14.96	9.80	1.53	3.39	0.35	22,672	2,313	768	210	41.13	50.54	16
17	18.97	12.80	1.48	4.42	0.35	28,507	2,313	766	210	38.99	50.16	17
18	18.99	12.70	1.50	4.39	0.35	28,607	2,252	700	210	40.48	51.32	18
19	22.06	14.70	1.50	5.18	0.35	33,151	2,255	801	210	40.63	49.21	19
20	22.00	14.70	1.50	5.10	0.55	33,131	2,233	001	210	40.05	73.21	20
21												21
22												22
23	15.71	10.30	1.52	3.69	0.36	23,521	2,284	827	210	38.95	48.56	23
24	16.27	10.70	1.52	3.80	0.36	24,428	2,283	807	210	40.65	49.41	24
25	18.59	12.60	1.48	4.39	0.35	27,865	2,211	820	210	40.63	50.54	25
26	18.41	12.60	1.46	4.29	0.34	27,764	2,204	819	210	39.95	48.48	26
27												27
28												28
29												29
30	20.96	14.30	1.47	4.86	0.34	31,607	2,210	798	210	40.41	51.51	30
31	22.28	14.70	1.52	5.06	0.34	33,803	2,300	834	210	41.52	51.21	31
	_											1
Tot	329.658	216.80		76.44				14,609.000	3,780.000	733.960	899.200	Tot
Avg	18.314	12.04	1.52	4.247		27,573		811.611	210.000	40.776	49.956	Avg
Min	14.961	9.80	1.46	3.390	0.34	22,672	2,204		210	38.95	48.48	Min
Max	22.280	14.70	1.61	5.180	0.37	33,803	2,428		210	43.53	51.51	Max





**April** 

D	Weigh		Wet					П		Don	sities	7 <i>D</i>
a	Belt Scale	Hours	Tons Per		Dry Tons	Lbs. water	Lbs.	Inlet	Outlet	Loose	Packed	a
t	Wet Tons	Run	Hour	Dry Tons	Per Hour	Evarorated	Per Hour	Temp	Temp	Density	Density	t
e	1100 10115	11011	11041	<i>D.y.</i> 10.13			1 01 11001	ТСПТР	ТСШР	Demoney	Denoity	e
1	22.15	14.00	1.58	5.17	0.37	33,265	2,376	870	210	41.62	50.14	1
2	22.84	14.00	1.63	5.43	0.39	34,105	2,436	886	210	42.06	50.30	2
3						5 1,200	_,					3
4												4
5												5
6	23.90	14.30	1.67	5.40	0.38	36,201	2,532	872	210	42.83	50.37	6
7	23.19	14.40	1.61	5.25	0.36	35,183	2,443	861	210	43.21	51.47	7
8	22.73	14.60	1.56	5.20	0.36	34,384	2,355	856	210	43.47	52.29	8
9	26.80	16.60	1.61	6.12	0.37	40,533	2,442	885	210	42.46	50.44	9
10												10
11												11
12												12
13	22.64	14.40	1.57	5.23	0.36	34,130	2,370	844	210	43.22	50.48	13
14	26.86	16.60	1.62	6.20	0.37	40,442	2,436	833	210	44.96	52.44	14
15	23.83	14.60	1.63	5.48	0.38	35,861	2,456	846	210	42.38	49.26	15
16	23.79	14.70	1.62	5.63	0.38	35,559	2,419	848	210	43.55	50.56	16
17												17
18												18
19												19
20	20.04	12.30	1.63	4.50	0.37	30,448	2,475	879	210	44.88	51.87	20
21	20.73	12.70	1.63	4.70	0.37	31,302	2,465	866	210	42.80	49.36	21
22	17.33	10.60	1.63	4.00	0.38	26,040	2,457	866	210	47.23	51.86	22
23	17.30	10.70	1.62	4.09	0.38	25,901	2,421	870	210	49.79	51.34	23
24												24
25												25
26												26
27	16.62	10.30	1.61	3.94	0.38	24,780	2,406	842	210	41.99	52.40	27
28	17.12	10.60	1.62	4.13	0.39	25,471	2,403	825	210	46.39	52.25	28
29												29
30	13.61	8.50	1.60	3.29	0.39	20,245	2,382	855	210	48.67	50.54	30
31												31
<b>.</b>	261 465	222.00		02.76				14 604 000	2 572 222	754 540	067.270	<b>-</b> .
Tot	361.465	223.90		83.76				14,604.000	3,570.000	751.510	867.370	Tot
	24.262	10.17	1.01	4.027		24.004		050.050	210.000	44.205	E4 022	_
Avg	21.263	13.17	1.61	4.927		31,991		859.059	210.000	44.206	51.022	Avg
	40.646	0.50	4 50	2.205	0.00	20.24=	2.255		242	44.65	40.05	<b>.</b>
Min	13.613	8.50	1.56	3.290	0.36	20,245	2,355		210	41.62	49.26	Min
M	26.056	16.60	1.67	C 200	0.20	40 522	2 522		210	40.70	F2 44	N4-
Max	26.856	16.60	1.67	6.200	0.39	40,533	2,532		210	49.79	52.44	Max





Мау

D	Weigh		Wet					1		Den	sities	D
а	Belt Scale	Hours	Tons Per		<b>Dry Tons</b>	Lbs. water	Lbs.	Inlet	Outlet	Loose	Packed	a
t	Wet Tons	Run	Hour	<b>Dry Tons</b>	Per Hour	Evarorated	Per Hour	Temp	Temp	Density	Density	t
e												e
1												1
2												2
3												3
4 5	17.35	10.20	1.70	4.10	0.40	25,992	2,548	840	210	44.87	54.64	5
6	17.52	10.50	1.67	4.21	0.40	26,089	2,485	833	210	44.36	53.64	6
7	17.48	10.60	1.65	4.20	0.40	26,030	2,456	821	210	44.91	53.48	7
8	271.10	10.00	1.00	20	51.15		2, .55	021		,	33.10	8
9												9
10												10
11	23.17	14.30	1.62	5.53	0.39	34,628	2,422	830	210	44.65	52.58	11
12	20.66	12.60	1.64	4.87	0.39	31,000	2,460	848	210	45.07	52.63	12
13	19.88	12.50	1.59	4.74	0.38	29,732	2,379	848	210	44.50	53.80	13
14	20.72	13.00	1.59	4.92	0.38	31,108	2,393	844	210	43.60	52.31	14
15												15
16												16
17												17
18	29.93	18.30	1.64	7.16	0.39	44,645	2,440	831	210	45.17	53.98	18
19	30.36	18.75	1.62	7.18	0.38	45,412	2,422	839	210	44.09	52.69	19
20	37.25	22.00	1.69	8.76	0.40	55,800	2,536	851	210	43.72	51.96	20
21 22	17.83	10.00	1.78	4.46	0.45	26,225	2,622	866	210	43.70	49.21	21 22
23												23
24												24
25												25
26	25.31	16.40	1.54	6.17	0.38	37,588	2,292		210	46.45	53.15	26
27	27.59	16.70	1.65	6.62	0.40	41,166	2,465	842	210	44.57	51.06	27
28	27.37	16.70	1.64	6.54	0.39	40,868	2,447	838	210	43.87	51.29	28
29												29
30												30
31												31
Tot	332.409	202.55		79.46				11,727.870	2,940.000	623.530	736.420	Tot
Avg	23.744	14.47	1.64	5.676		35,449		837.705	210.000	44.538	52.601	Avg
Min	17.354	10.00	1.54	4.100	0.38	25,992	2,292		210	43.60	49.21	Min
Max	37.249	22.00	1.78	8.760	0.45	55,800	2,622		210	46.45	54.64	Max





June

				I	Ī	T		1		1		7
D	Weigh		Wet								sities	D
a t	Belt Scale Wet Tons	Hours Run	Tons Per Hour	Dry Tons	Dry Tons Per Hour	Lbs. water Evarorated	Lbs. Per Hour	Inlet Temp	Outlet Temp	Loose Density	Packed Density	a t
	wet rons	Kun	Hour	Dry Tons	Per Hour	Evarorated	Per Hour	remp	remp	Density	Density	╡
<i>e</i>	20.04	16.20	1.64	C C0	0.41	20.215	2 427	000	210	42.12	F1 12	<i>e</i>
1	26.64	16.20	1.64	6.60	0.41	39,315	2,427	808	210	43.13	51.12	1
2	24.27	14.80	1.64	5.98	0.40	35,894	2,425	826	210	47.02	52.43	2
3	20.77 20.26	12.70 12.70	1.64 1.60	5.18 5.05	0.41 0.40	30,577 29,844	2,408 2,350	843 845	210 210	44.69 47.31	51.24 51.32	3
4 5	20.20	12.70	1.00	5.05	0.40	29,044	2,330	045	210	47.31	51.52	5
6												6
7												7
8	21.82	14.20	1.54	5.38	0.38	32,244	2,271	785	210	47.67	52.29	8
9	19.22	12.60	1.53	4.68	0.37	28,523	2,264	812	210	45.02	52.47	9
10	18.89	12.70	1.49	4.60	0.36	28,080	2,211	835	210	47.80	54.78	10
11	18.76	12.60	1.49	4.68	0.37	27,684	2,197	819	210	46.02	53.96	11
12	10170	12.00	11.15	1100	0.57	27,001	2/13/	015	210	10102	33.30	12
13												13
14												14
15	16.07	10.40	1.55	3.82	0.37	24,007	2,308	781	210	44.28	50.31	15
16	25.89	16.75	1.55	6.16	0.37	38,782	2,315	818	210	45.51	51.10	16
17	25.92	16.70	1.55	6.21	0.37	38,706	2,318	825	210	48.36	55.06	17
18	25.31	16.70	1.52	6.24	0.37	37,554	2,249	843	210	44.85	51.81	18
19						,						19
20												20
21												21
22	24.38	16.30	1.50	6.08	0.37	35,864	2,200	737	210	48.23	53.76	22
23	25.20	16.70	1.51	6.27	0.38	37,120	2,223	783	210	46.93	55.15	23
24	25.77	16.70	1.54	6.41	0.38	38,001	2,275	789	210	47.49	53.70	24
25	27.10	16.80	1.61	6.83	0.41	39,793	2,369	834	210	44.06	51.83	25
26												26
27												27
28												28
29	21.12	14.10	1.50	5.22	0.37	31,155	2,210	804	210	44.40	51.50	29
30	26.68	16.70	1.60	6.59	0.39	39,456	2,363	830	210	45.25	53.37	30
31												31
Tot	414.049	266.35		101.98				14,616.970	3,779.830	828.020	947.200	Tot
Avg	23.003	14.80	1.55	5.666		34,033		812.054	209.991	46.001	52.622	Avg
Min	16.068	10.40	1.49	3.820	0.36	24,007	2,197		210	43.13	50.31	Min
Max	27.096	16.80	1.64	6.830	0.41	39,793	2,427		210	48.36	55.15	Max





July

D	Weigh		Wet							Dens	sities	] ,
a	Belt Scale	Hours	Tons Per		<b>Dry Tons</b>	Lbs. water	Lbs.	Inlet	Outlet	Loose	Packed	١.
t	Wet Tons	Run	Hour	<b>Dry Tons</b>	Per Hour	Evarorated	Per Hour	Temp	Temp	Density	Density	
e												ľ
1	27.20	16.80	1.62	6.84	0.41	40,020	2,382	835	210	44.32	53.31	
2												
3												
4 5												
6	13.41	9.40	1.43	3.05	0.32	20,351	2,165	776	210	45.40	54.68	
7	18.82	13.00	1.45	4.26	0.33	28,600	2,200	773	210	45.42	53.01	
8	25.01	16.50	1.52	5.81	0.35	37,731	2,287	766	210	45.37	54.79	
9	25.55	16.80	1.52	6.06	0.36	38,270	2,278	818	210	45.17	51.74	
10							,					1
11												1
12												1
13	23.77	16.30	1.46	5.71	0.35	35,470	2,176	799	210	43.60	52.47	1
14	24.93	16.70	1.49	6.01	0.36	37,180	2,226	778	210	44.31	54.01	1
15	19.72	12.80	1.54	4.66	0.36	29,643	2,316	816	210	44.17	53.74	1
16	21.33	14.50	1.47	5.23	0.36	31,699	2,186	832	210	48.29	52.84	1
17												] 1
18												1
19												1
20	16.23	11.10	1.46	4.02	0.36	24,061	2,168	745	210	48.77	54.71	2
21	19.54	12.70	1.54	4.99	0.39	28,675	2,258	776	210	51.50	54.75	2
22 23	16.62 24.44	10.50 14.70	1.58 1.66	4.24 6.44	0.40 0.44	24,395 35,584	2,323 2,421	796 831	210 210	47.00 46.78	52.43 51.53	2
23 24	24.44	14.70	1.00	0.44	0.44	33,304	2,421	031	210	40.76	51.55	
25												2
26												2
27	18.03	12.30	1.47	4.50	0.37	26,611	2,163	763	210	42.89	53.06	2
28	16.71	11.30	1.48	4.18	0.37	24,656	2,182	760	210	43.50	52.46	2
29	19.38	12.50	1.55		0.40		2,265		209		52.66	
30	18.97	12.70	1.49	4.89	0.39	27,731	2,184	762	209	41.80	50.82	3
31												3
												1
Tot	349.639	230.60		85.85				13,404.000	3,568.000	770.840	903.010	Т
Avg	20.567	13.56	1.52	5.050		30,529		788.471	209.882	45.344	53.118	Α
Min	13.408	9.40	1.43	3.050	0.32	20,351	2,163		209	41.80	50.82	N
	07.00	40.05					0.101					
∕lax	27.204	16.80	1.66	6.840	0.44	40,020	2,421		210	51.50	54.79	IP





August

D	Weigh		Wet								sities	D
a	Belt Scale	Hours	Tons Per		<b>Dry Tons</b>		Lbs.	Inlet	Outlet	Loose	Packed	a
t	Wet Tons	Run	Hour	<b>Dry Tons</b>	Per Hour	Evarorated	Per Hour	Temp	Temp	Density	Density	t
e												e
1												1
2												2
3	20.55	14.40	1.43	5.08	0.35	30,478	2,117	732	209	44.88	54.63	3
4	18.45	12.70	1.45	4.65	0.37	27,198	2,142	739	206	43.22	52.70	4
5	19.11	12.70	1.50	4.85	0.38	28,102	2,213	759	209	43.45	51.53	5
6	16.06	10.40	1.54	4.12	0.40	23,547	2,264	765	206	43.91	52.78	6
7												7
8												8
9												9
10												10
11												11
12												12
13	12.18	8.40	1.45	2.92	0.35	18,231	2,170	772	209	44.18	54.54	13
14												14
15												15
16												16
17												17
18												18
19	23.09	15.70	1.47	5.21	0.33	35,208	2,243	771	209	42.42	51.74	19
20	34.05	23.00	1.48	8.10	0.35	51,048	2,219	762	209	45.40	52.96	20
21	28.17	18.70	1.51	6.68	0.36	42,271	2,260	786	208	44.02	51.55	21
22												22
23												23
24	24.08	17.40	1.38	5.78	0.33	36,119	2,076	741	209	44.14	53.24	24
25	24.90	18.70	1.33	5.80	0.31	37,714	2,017	729	209	43.81	54.99	25
26	22.61	15.60	1.45	5.48	0.35	33,741	2,163	784	209	41.40	51.70	26
27	18.30	13.70	1.34	4.54	0.33	27,242	1,988	767	209	43.40	52.74	27
28												28
29												29
30												30
31	24.66	16.30	1.51	5.87	0.36	36,941	2,266	792	209	44.27	53.51	31
Tot	286.210	197.70		69.08				9,899.000	2,710.000	568.500	688.610	Tot
Avg	22.016	15.21	1.45	5.314		32,911		761.462	208.462	43.731	52.970	Avg
Min	12.179	8.40	1.33	2.920	0.31	18,231	1,988		206	41.40	51.53	Min
Max	34.052	23.00	1.54	8.100	0.40	51,048	2,266		209	45.40	54.99	Max





Sept.

_	Weish		Wat	П	1	Ι	<u> </u>			Darri	itios	1.
D a	Weigh Belt Scale	Hours	Wet Tons Per		Dry Tons	Lbs. water	Lbs.	Inlet	Outlet	Loose	sities Packed	1
t	Wet Tons	Run	Hour	Dry Tons	Per Hour	Evarorated	Per Hour	Temp	Temp	Density	Density	
e	Weerons	Itun	Hour	Diy rons	T CI TIOUI	Evaloratea	T CI TIOUI	remp	тетр	Bensity	Density	1
1	25.10	16.60	1.51	6.01	0.36	37,557	2,262	791	209	42.82	53.34	
2	24.93	16.60	1.50	5.96	0.36	37,354	2,250	790	209	43.15	52.09	
3	26.30	17.40	1.51	6.38	0.37	39,438	2,267	796	209	41.29	51.70	
4												
5												
6												
7												
8	32.20	22.90	1.41	7.96	0.35	47,803	2,087	740	209	45.42	53.38	
9	33.34	24.00	1.39	8.06	0.34	49,898	2,079	735	209	42.99	53.80	
10	33.32	24.00	1.39	8.18	0.34	49,597	2,067	734	209	42.99	53.80	
11	22.47	15.00	1.50	5.64	0.38	33,081	2,205	757	209	42.23	51.86	
12												
13												
14	31.97	22.75	1.41	7.21	0.32	48,772	2,144	761	209	42.14	52.66	
15	26.70	17.70	1.51	6.12	0.35	40,618	2,295	771	209	43.11	51.26	l
16	26.47	16.50	1.60	6.39	0.39	39,555	2,397	820	209	42.14	50.68	l
17	24.79	16.60	1.49	6.07	0.37	36,935	2,225	774	209	41.80	52.14	l
18												l
19												
20												
21	31.62	22.60	1.40	6.92	0.31	48,723	2,156	770	209	41.66	52.43	
22	35.94	24.00	1.50	7.90	0.33	55,084	2,295	834	209	38.72	49.50	
23	24.31	17.00	1.43	5.67	0.33	36,773	2,163	818	209	38.60	48.27 51.24	
24 25	16.10	12.50	1.29	3.95	0.32	24,116	1,929	746	209	39.99	51.24	
26												
27												
28	12.67	10.40	1.22	2.84	0.27	19,394	1,865	723	208	40.02	50.20	П
29		8.60	1.30		0.30		1,979		209		49.75	
30	10.72	8.50	1.26	2.61	0.31	16,023	1,885	709	209	44.29	53.78	
31						,	,					
												1
Tot	450.137	313.65		106.46				13,828.000	3,761.000	754.100	931.880	-
Avg	25.008	17.43	1.44	5.914		37,653		768.222	208.944	41.894	51.771	1
-												
Min	10.718	8.50	1.22	2.590	0.27	16,023	1,865		208	38.60	48.27	ı
Мах	35.936	24.00	1.60	8.180	0.39	55,084	2,397		209	45.42	53.80	N





Oct

				П								1
D	Weigh		Wet		D T	the meter	116-	Tolor	0.41-4	Dens		-
a t	Belt Scale Wet Tons	Hours Run	Tons Per Hour	Dry Tons	Dry Tons Per Hour	Lbs. water Evarorated	Lbs. Per Hour	Inlet Temp	Outlet Temp	Loose Density	Packed Density	ľ
e e	Wet Ions	Kuli	Hour	DIY TOIIS	Pel Houl	Lvaiorateu	Pel Houl	Temp	Temp	Delisity	Delisity	1
1												
2												
3												
4												
5	22.07	16.10	1.37	5.17	0.32	33,301	2,068	734	209	39.03	48.79	
6	21.92	16.50	1.33	5.13	0.31	33,099	2,006	745	209	39.82	49.48	
7	21.65	16.60	1.30	5.10	0.31	32,461	1,955	757	209	37.22	47.42	
8	21.60	16.60	1.30	4.88	0.29	33,007	1,988	730	208	36.60	49.09	
9												
10												1
11												1
12												1
13	20.74	15.10	1.37	4.66	0.31	31,710	2,100	727	209	39.08	48.65	1
14	19.02	14.50	1.31	4.33	0.30	28,989	1,999	743	209	41.91	48.92	1
15	19.49	14.70	1.33	4.51	0.31	29,642	2,016	754	209	40.75	49.59	1
16												1
17												
18	F 22	4.00	4.22		0.20	0.242	2.064	710	200			1
19	5.33	4.00	1.33	1.14	0.29	8,243	2,061	718	209	40.50	E1 22	1
20	23.27	17.75	1.31	5.12	0.29	35,735	2,013	753	209	40.58	51.23 46.75	2
21 22	33.96 29.87	24.00 22.60	1.42 1.32	7.77 7.33	0.32 0.32	51,577 44,309	2,149 1,961	775 722	209 209	35.77 28.91	46.75	2
23	29.07	22.00	1.32	7.33	0.32	44,309	1,901	722	209	20.91	44.22	2
24												2
25												2
26	25.96	22.50	1.15	6.31	0.28	38,709	1,720	678	209	28.97	39.16	2
27	31.71	24.00	1.32	7.91	0.33	46,831	1,951	735	209	28.09	39.04	2
28	35.94	24.00	1.50	8.96	0.37	53,142	2,214	809	209	26.66	36.20	2
29		21.70	1.51		0.41	47,276	2,179	783	209		36.13	
30	16.79	12.50	1.34	4.63	0.37	24,062	1,925	727	210	22.89	34.80	3
31												3
Tot	382.123	283.15		91.84				11,890.000	3,344.000	512.110	669.470	Т
Avg	23.883	17.70	1.35	5.740		35,756		743.125	209.000	34.141	44.631	Α
Min	5.331	4.00	1.15	1.140	0.28	8,243	1,720		208	22.89	34.80	M
Max	35.935	24.00	1.51	8.960	0.41	53,142	2,214		210	41.91	51.23	М





Nov

								1		1		1
D	Weigh		Wet								sities	
a	Belt Scale	Hours	Tons Per	Day Tone	Dry Tons	Lbs. water	Lbs.	Inlet	Outlet	Loose	Packed	
t	Wet Tons	Run	Hour	Dry Tons	Per Hour	Evarorated	Per Hour	Temp	Temp	Density	Density	1
<i>e</i>												
1	16.50	15.00	1.05	2.02	0.24	25 106	1 505	CEE	210	20.17	41.17	
2	16.59 25.89	15.80 24.00	1.05 1.08	3.82 6.15	0.24	25,196 38,961	1,595 1,623	655 665	210 210	28.17 28.66	41.17	
3	25.69	24.00	1.08	6.56	0.26	41,051	1,710	680	210	27.96	42.21	
5	26.53	22.20	1.14	6.29	0.27	39,985	1,801	716	210	28.44	39.46	
6	20.55	22.20	1.20	0.29	0.20	39,903	1,001	710	210	20.44	33.40	
7												
8												
9	22.68	19.75	1.15	5.40	0.27	34,091	1,726	664	210	25.54	37.18	
10	27.06	24.00	1.13	6.62	0.28	40,371	1,682	676	210	25.65	37.79	L
11	23.98	23.80	1.01	6.00	0.25	35,693	1,500	611	210	24.28	36.95	
12	25.50	20.00	2.02	0.00	0.20	33,023	2,000	V-1-		220	50.55	
13												
14												L
15	9.07	8.60	1.05	2.45	0.28	13,022	1,514	609	210	24.90	40.35	١.
16	28.93	24.00	1.21	7.43	0.31	42,334	1,764	685	210	22.79	33.08	Ŀ
17	33.06	24.00	1.38	8.47	0.35	48,267	2,011	722	210	27.20	38.81	١.
18	37.27	24.00	1.55	9.16	0.38	55,160	2,298	787	210	26.59	38.59	1
19	22.19	14.00	1.58	5.68	0.41	32,464	2,319	791	210	26.64	37.78	1
20												2
21												2
22	11.45	9.00	1.27	2.93	0.33	16,806	1,867	699	210	25.04	38.72	2
23	30.60	24.00	1.27	8.11	0.34	44,215	1,842	635	210	25.66	35.18	2
24	31.27	24.00	1.30	8.54	0.36	44,601	1,858	700	210	25.14	34.65	2
25	14.89	14.00	1.06	4.14	0.30	21,195	1,514	621	210	21.88	32.90	2
26												2
27												2
28												2
29	9.44	9.10	1.04		0.27			635	210	19.86		2
30	27.67	24.00	1.15	7.22	0.30	40,264	1,678	661	210	22.08	33.27	3
31												3
Tot	425.901	352.25		107.46				12,212.210	3,780.000	456.480	674.130	T
	_											
Avg	23.661	19.57	1.21	5.970		34,856		678.456	210.000	25.360	37.452	A
												l
Min	9.066	8.60	1.01	2.450	0.24	13,022	1,500		210	19.86	32.90	١
												L
Мах	37.266	24.00	1.58	9.160	0.41	55,160	2,319		210	28.66	42.21	M





Dec

D	Weigh		Wet							Dens	sities	1
a	Belt Scale	Hours	Tons Per		<b>Dry Tons</b>	Lbs. water	Lbs.	Inlet	Outlet	Loose	Packed	1
t	Wet Tons	Run	Hour	<b>Dry Tons</b>	Per Hour	Evarorated	Per Hour	Temp	Temp	Density	Density	
e												
1	23.18	20.40	1.14	6.24	0.31	33,316	1,633	650	210	23.82	31.78	
2	23.37	22.55	1.04	6.51	0.29	33,261	1,475	612	210	20.97	30.76	
3	10.83	11.10	0.98	3.00	0.27	15,500	1,396	632	209	19.46	31.76	
4												
5												
6	11.64	9.40	1.24	3.09	0.33	16,825	1,790	666	210	22.97	35.02	
7	32.12	24.00	1.34	8.29	0.35	46,958	1,957	665	210	24.71	31.95	
8	30.91	24.00	1.29	8.55	0.36	44,189	1,841	725	212	21.70	30.95	
9	18.33	13.90	1.32	5.01	0.36	26,483	1,905	761	211	22.78	32.99	
10												1
11												1
12												1
13	24.20	16.00	1 24	F 46	0.24	21 404	1.000	747	210	22.26	22.44	1
14	21.39	16.00	1.34	5.46	0.34	31,484	1,968	747	210	23.36	33.44	H
15	22.50	16.30	1.38	6.35	0.39	31,847	1,954	736	210	23.65	32.85	ŀ
16	22.95	16.50	1.39	6.45	0.39	32,528	1,971	739	210	23.25	32.63	1
17 18	22.12	16.40	1.35	5.91	0.36	31,944	1,948	711	210	25.64	35.66	1
												ľ
19 20												2
21	29.80	22.20	1.34	8.19	0.37	42,711	1,924	751	210	25.00	34.84	2
22	30.41	24.00	1.34	8.18	0.37	43,904	1,829	731	210	23.64	31.55	2
23	21.78	17.00	1.28	6.07	0.34	31,108	1,830	710	210	23.38	32.16	2
24	21.70	17.00	1.20	0.07	0.50	31,100	1,030	700	212	25.50	32.10	2
25												2
26												2
27												2
28	28.86	22.20	1.30	7.54	0.34	42,021	1,893	732	212	24.06	32.01	2
29	32.19	24.00	1.34		0.37		1,918		212		33.63	
30	25.38	18.50	1.37	6.45	0.35	37,311	2,017	767	212	25.89	33.43	3
31												3
												1
Tot	407.738	318.45		110.07				12,039.000	3,580.000	399.070	557.410	Т
Avg	23.985	18.73	1.28	6.475		34,554		708.176	210.588	23.475	32.789	Α
												1
Min	10.832	9.40	0.98	3.000	0.27	15,500	1,396		209	19.46	30.76	N
												1
Мах	32.186	24.00	1.39	8.780	0.39	46,958	2,017		212	25.89	35.66	M

Inlet and Outlet Average Daily Temperatures, °F

Jan-20

	Trai	n #1	Trai	n #2	Trai	in #3	Trai	in #4	
D									D
a	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	a
t	Temp	Temp	Temp	Temp	Temp	Temp	Temp	Temp	t
e									e
1	NR	NR	705.33	225.18	809.39	224.29	678.86	223.29	1
2	NR	NR	762.44	226.04	NR	NR	748.95	223.64	2
3	NR	NR	719.34	226.43	NR	NR	692.11	223.58	3
4	764.13	222.42	739.16	226.16	672.38	213.39	687.47	223.60	4
5	687.21	224.74	NR	NR	758.69	225.55	663.52	223.63	5
6	677.38	226.51	NR	NR	760.30	226.08	698.56	223.98	6
7	742.66	223.26	NR	NR	641.21	225.24	791.33	223.26	7
8	861.27	223.93	NR	NR	NR	NR	857.48	222.19	8
9	911.35	222.53	NR	NR	883.54	222.93	856.13	221.31	9
10	939.13	219.53	NR	NR	945.00	223.38	918.39	220.63	10
11	916.17	221.17	863.59	225.17	941.92	223.11	893.95	220.44	11
12	864.62	221.49	834.24	224.85	NR	NR	807.82	220.65	12
13	820.07	221.90	781.25	225.58	NR	NR	752.83	221.68	13
14	797.52	221.39	772.96	225.60	NR	NR	754.37	221.63	14
15	811.36	222.10	789.54	226.83	NR	NR	775.31	221.67	15
16	803.67	222.45	774.85	227.14	NR	NR	774.43	220.70	16
17	814.55	222.50	777.72	225.63	845.91	221.78	812.02	220.22	17
18	NR	NR	750.31	222.89	895.54	215.18	854.73	220.60	18
19	NR	NR	727.58	223.13	891.27	216.44	768.87	220.52	19
20	NR	NR	762.50	224.36	NR	NR	768.65	221.36	20
21	NR	NR	783.47	225.59	NR	NR	756.93	222.54	21
22	NR	NR	789.03	226.80	NR	NR	772.00	222.32	22
23	347.37	199.65	915.81	227.21	NR	NR	916.93	222.53	23
24	865.56	222.31	878.91	226.32	NR	NR	852.33	222.56	24
25	766.33	224.18	762.29	226.69	651.22	218.54	778.28	223.68	25
26	621.43	224.20	712.97	227.05	683.75	225.75	NR	NR	26
27	551.49	222.43	770.63	227.42	774.67	225.93	NR	NR	27
28	814.51	224.96	818.66	227.84	739.01	205.36	NR	NR	28
29	790.97	224.37	764.74	226.56	810.18	224.08	NR	NR	29
30	832.70	223.21	824.89	225.81	884.57	226.09	575.90	224.29	30
31	780.90	222.53	NR	NR	898.08	227.93	671.68	224.66	31
Tot									Tot
Avg	773	222	783	226	805	222	773	222	Avg
Min	347	200	705	223	641	205	576	220	Min
Max	939	227	916	228	945	228	918	225	Max
	*NR = Not Running								

#### Inlet and Outlet Average Daily Temperatures, °F

Feb-20

	Trai	in #1	Trai	in #2	Trai	in #3	Trail	in #4	
D									D
a	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	a
t	Temp	Temp	Temp	Temp	Temp	Temp	Temp	Temp	t
e									e
1	810.71	223.78	NR	NR	867.92	226.83	738.79	223.69	1
2	767.50	223.55	NR	NR	724.63	224.21	699.23	222.99	2
3	769.52	224.36	NR	NR	918.61	225.82	559.10	222.27	3
4	713.38	225.64	NR	NR	866.72	225.37	647.29	224.39	4
5	783.71	224.57	NR	NR	NR	NR	676.16	224.45	5
6	817.68	224.44	NR	NR	NR	NR	653.21	222.75	6
7	NR	NR	607.32	222.26	NR	NR	704.35	223.64	7
8	NR	NR	580.21	225.47	NR	NR	774.36	223.15	8
9	NR	NR	623.85	225.38	NR	NR	871.82	222.96	9
10	NR	NR	735.74	225.01	NR	NR	819.63	222.62	10
11	NR	NR	799.58	223.94	NR	NR	779.13	222.54	11
12	NR	NR	776.62	224.95	NR	NR	772.94	224.01	12
13	NR	NR	824.60	225.57	861.20	224.35	679.19	223.71	13
14	738.13	221.85	779.52	225.60	820.04	224.68	NR	NR	14
15	790.68	222.04	NR	NR	838.76	224.41	NR	NR	15
16	583.29	221.69	NR	NR	759.17	224.27	NR	NR	16
17	718.25	220.24	NR	NR	898.30	222.94	NR	NR	17
18	814.17	222.44	664.78	223.69	847.31	225.12	NR	NR	18
19	841.99	223.25	779.68	225.54	882.82	227.23	NR	NR	19
20	685.75	222.45	578.62	224.87	878.93	226.74	551.84	222.93	20
21	665.82	223.82	788.70	224.23	619.90	222.48	685.09	223.23	21
22	NR	NR	741.03	223.96	783.22	223.71	NR	NR	22
23	NR	NR	713.36	223.86	826.72	224.26	NR	NR	23
24	NR	NR	669.14	223.61	785.08	225.75	NR	NR	24
25	NR	NR	695.31	224.17	805.98	227.37	618.60	217.71	25
26	NR	NR	706.81	225.01	824.91	225.94	571.19	220.59	26
27	NR	NR	745.14	224.46	878.70	224.77	NR	NR	27
28	NR	NR	688.39	224.11	821.09	226.07	NR	NR	28
29	639.27	219.98	515.30	222.50	753.14	224.79	NR	NR	29
Tot									Tot
Avg	743	223	701	224	822	225	694	223	Avg
Min	583	220	515	222	620	222	552	218	Min
Max	842	226	825	226	919	227	872	224	Max
	*NR = Not Running								

Inlet and Outlet Average Daily Temperatures, °F

Mar-20

	Trail	in #1	Trai	in #2	Trai	in #3	Trai	in #4	
D									D
а	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	а
t	Temp	Temp	Temp	Temp	Temp	Temp	Temp	Temp	t
e									e
1	750.76	224.82	NR	NR	737.55	225.62	NR	NR	1
2	779.17	225.44	NR	NR	783.39	227.04	NR	NR	2
3	793.32	223.80	NR	NR	888.79	227.04	647.18	219.82	3
4	777.97	223.56	NR	NR	826.02	227.36	710.44	222.99	4
5	836.07	224.27	NR	NR	NR	NR	813.94	223.50	5
6	746.63	224.42	NR	NR	NR	NR	743.84	222.71	6
7	751.11	224.39	NR	NR	NR	NR	771.64	222.81	7
8	813.02	224.84	NR	NR	NR	NR	784.66	223.98	8
9	733.23	224.80	784.07	227.28	NR	NR	682.25	223.54	9
10	798.55	222.72	685.95	227.04	NR	NR	661.79	222.70	10
11	837.66	223.33	494.54	225.06	NR	NR	741.08	223.54	11
12	781.16	222.90	452.56	224.83	NR	NR	718.37	224.03	12
13	768.19	223.43	702.26	226.83	NR	NR	679.00	224.01	13
14	638.25	223.16	762.35	227.66	755.61	226.28	NR	NR	14
15	531.98	221.43	711.05	227.53	706.30	226.49	NR	NR	15
16	787.85	221.50	739.41	227.12	756.65	227.37	NR	NR	16
17	785.22	222.18	803.76	227.06	820.53	228.06	NR	NR	17
18	687.11	205.70	879.64	228.78	922.49	228.38	729.23	224.25	18
19	867.72	224.30	821.05	226.37	911.78	226.75	748.10	224.33	19
20	804.77	223.44	771.13	224.58	857.64	226.49	721.15	223.65	20
21	816.91	223.32	843.52	225.87	867.94	226.45	764.28	223.61	21
22	679.26	223.01	795.96	226.34	811.24	225.26	788.67	224.07	22
23	NR	NR	560.19	226.34	879.33	227.67	745.34	224.65	23
24	NR	NR	NR	NR	901.91	225.28	743.66	224.53	24
25	NR	NR	712.64	226.70	888.57	224.58	726.31	222.35	25
26	NR	NR	765.91	226.49	850.77	227.03	540.11	221.50	26
27	849.38	223.22	842.51	226.05	942.10	227.36	834.27	223.11	27
28	761.08	221.14	NR	NR	782.08	224.87	748.40	221.96	28
29	681.12	217.28	NR	NR	768.88	222.00	688.07	218.34	29
30	745.40	217.29	NR	NR	768.66	222.47	756.20	218.59	30
31	718.16	217.83	NR	NR	840.13	223.33	719.33	219.74	31
Tot									Tot
Avg	760	222	729	227	830	226	728	223	Avg
Min	532	206	453	225	706	222	540	218	Min
Max	868	225	880	229	942	228	834	225	Max
1	*NR = Not Running								

Inlet and Outlet Average Daily Temperatures, °F

Apr-20

	Trail	in #1	Trai	in #2	Trai	in #3	Trai	in #4	
D									D
а	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	a
t	Temp	Temp	Temp	Temp	Temp	Temp	Temp	Temp	t
e									e
1	806.18	218.49	NR	NR	881.40	223.43	737.46	221.52	1
2	790.73	218.49	605.55	224.67	875.98	223.74	700.80	221.95	2
3	753.81	218.19	774.13	224.81	913.17	224.22	760.16	223.42	3
4	588.25	218.57	752.47	224.77	925.60	221.94	717.36	222.55	4
5	622.27	218.50	788.85	225.44	NR	NR	734.85	222.10	5
6	674.04	219.44	607.54	223.43	NR	NR	618.59	221.61	6
7	802.43	219.11	716.61	225.38	NR	NR	NR	NR	7
8	854.58	218.01	834.29	224.74	NR	NR	640.94	220.55	8
9	843.17	218.86	767.82	225.16	NR	NR	775.05	221.84	9
10	798.99	218.95	736.72	226.11	NR	NR	663.45	222.54	10
11	777.54	219.47	620.24	221.85	NR	NR	NR	NR	11
12	811.71	219.51	780.96	225.76	NR	NR	NR	NR	12
13	858.18	219.30	779.87	226.24	900.67	222.38	NR	NR	13
14	824.21	219.35	776.26	225.93	883.26	223.33	NR	NR	14
15	767.82	219.86	729.53	226.45	NR	NR	NR	NR	15
16	564.88	203.37	791.76	225.25	923.98	224.49	NR	NR	16
17	NR	NR	739.63	227.19	843.40	225.42	NR	NR	17
18	NR	NR	787.01	227.20	915.78	225.41	NR	NR	18
19	NR	NR	811.80	227.92	974.19	225.49	NR	NR	19
20	NR	NR	825.19	227.65	915.49	225.45	NR	NR	20
21	NR	NR	729.31	223.28	892.05	224.44	NR	NR	21
22	NR	NR	651.83	223.93	764.49	223.45	NR	NR	22
23	NR	NR	701.42	225.78	882.41	224.09	686.07	221.25	23
24	NR	NR	745.54	226.02	866.81	224.95	742.79	223.95	24
25	NR	NR	NR	NR	910.11	225.44	590.57	223.28	25
26	NR	NR	NR	NR	825.36	220.07	537.74	222.02	26
27	NR	NR	NR	NR	851.12	224.81	669.85	222.18	27
28	NR	NR	NR	NR	880.32	225.48	728.02	223.31	28
29	NR	NR	NR	NR	788.24	225.60	664.33	222.57	29
30	815.55	224.53	NR	NR	921.48	217.04	782.45	222.50	30
Tot									Tot
Avg	762	218	741	225	883	224	691	222	Avg
Min	565	203	606	222	764	217	538	221	Min
Max	858	225	834	228	974	226	782	224	Max
	*NR = Not Running								

Inlet and Outlet Average Daily Temperatures, °F

**May-20** 

	Trail	n #1	Trail	in #2	Trai	in #3	Trai	in #4	
D									D
a	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	a
t	Temp	Temp	Temp	Temp	Temp	Temp	Temp	Temp	t
e									e
1	823.22	222.35	NR	NR	NR	NR	700.06	221.84	1
2	825.92	222.42	NR	NR	NR	NR	792.00	223.38	2
3	875.26	221.80	NR	NR	NR	NR	814.56	224.50	3
4	775.09	221.75	NR	NR	NR	NR	752.35	224.51	4
5	774.46	221.78	NR	NR	NR	NR	737.91	224.50	5
6	685.63	221.76	549.65	224.52	NR	NR	655.58	223.24	6
7	828.93	221.54	832.24	225.33	740.89	220.86	812.13	223.30	7
8	611.22	222.99	762.56	224.93	798.36	224.83	772.02	223.49	8
9	NR	NR	720.29	223.96	802.45	224.08	NR	NR	9
10	NR	NR	757.59	223.92	780.52	220.87	NR	NR	10
11	769.57	221.94	758.80	223.74	905.82	224.36	NR	NR	11
12	819.71	221.25	841.32	223.91	905.34	225.10	NR	NR	12
13	741.05	208.61	535.76	220.56	932.54	226.05	NR	NR	13
14	839.59	221.48	766.00	219.97	938.65	225.50	NR	NR	14
15	774.93	217.66	755.16	219.66	853.46	223.39	NR	NR	15
16	662.21	214.31	693.16	218.63	815.83	223.48	695.04	221.14	16
17	NR	NR	730.74	219.94	877.47	224.40	727.08	221.52	17
18	NR	NR	675.77	219.90	805.98	224.50	683.74	221.96	18
19	NR	NR	754.42	221.64	884.27	224.51	756.20	222.83	19
20	NR	NR	708.58	222.17	790.05	224.46	680.82	221.70	20
21	751.37	218.00	600.33	221.90	781.72	224.64	742.34	221.87	21
22	832.53	219.15	NR	NR	783.91	223.90	800.64	223.91	22
23	799.50	219.01	NR	NR	811.39	224.36	685.99	223.21	23
24	776.17	218.72	NR	NR	854.37	224.46	695.07	222.53	24
25	728.36	218.72	NR	NR	807.44	224.53	709.04	222.88	25
26	811.32	218.98	NR	NR	NR	NR	797.73	224.35	26
27	739.34	217.09	NR	NR	768.12	221.36	684.62	223.59	27
28	804.15	216.40	NR	NR	881.77	223.51	779.42	222.84	28
29	744.27	216.39	NR	NR	779.00	224.43	734.33	221.90	29
30	729.82	218.31	674.52	223.22	NR	NR	705.39	221.53	30
31	812.87	220.09	745.49	225.13	NR	NR	NR	NR	31
Tot									Tot
Avg	773	219	715	222	832	224	735	223	Avg
Min	611	209	536	219	741	221	656	221	Min
Max	875	223	841	225	939	226	815	225	Max
	*NR = Not Running								



Commonwealth of Massachusetts

Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

Northeast Regional Office • 205B Lowell Street, Wilmington MA 01887 • 978-694-3200

Charles D. Baker Governor

Karyn E. Polito Lieutenant Governor Kathleen A. Theoharides Secretary

> Martin Suuberg Commissioner

November 5, 2020

Carl Pawlowski Manager of Operations Massachusetts Water Resources Authority 551 South Street Quincy, MA 02169

RE:

**Biosolids Processing Facility** 

Approval of Suitability Type I Permit Renewal Transmittal # X286528

Dear Mr. Pawlowski:

On December 15, 2015, MassDEP issued a Type I Approval of Suitability (AOS) for Beneficial Use to the Massachusetts Water Resources Authority (MWRA) for the Biosolids Processing Facility located on 551 South Street in Quincy, MA. An application for the renewal of this permit was received by MassDEP on August 21, 2020 and subsequently revised and resubmitted by MWRA on September 30, 2020, in accordance with 310 CMR 32.00, "Regulations for Land Application of Sludge and Septage" and has been deemed to be a complete application. MassDEP has completed its technical review of your application, which was prepared by MWRA.

In accordance with 310 CMR 32.00, Regulations for Land Application of Sludge and Septage, the 2015 permit was valid for a period of five (5) years. The AOS 2020 application was accompanied by the following documentation:

- Environmental Protection Agency (EPA) pretreatment program approval letter dated July 7, 2009.
- Pellet drying information and operating data tabulating the monthly biosolids processing facility inlet and outlet operating temperatures from January 2020 through June 2020.
- Sampling and Analysis Plan dated February 1, 1999 and approved by MassDEP on March 1, 1999.
- Analytical Results: MWRA utilizes heat drying as its vector reduction stabilization process to reduce moisture content of the sludge. MWRA analyzes grab samples weekly to

This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civit Rights at 617-292-5751.
TTY# MassRefay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

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demonstrate the moisture content of the sludge is less than ten percent (i.e., percent total solids greater than 90%). Six months of sample analyses from January 2020 through June 2020 were provided. In addition, the sampling results include required data for substances specified in 310 CMR 32.12(2)(a) and (b) and EPA Part 503 Regulations.

 Quincy Board of Health letter dated October 22, 2020, concurring with the operation of the compost facility and giving its concurrence of the renewal of the Type I Sludge Approval of Suitability for the Biosolids Processing Facility.

#### **DETERMINATION**

MassDEP hereby grants Type I approval for land application of the biosolids product produced at MWRA (located at 551South Street, Quincy), within the Commonwealth of Massachusetts. Pursuant to 310 CMR 32.11 (4), this approval shall be valid for no more than five (5) years from the date of this letter and shall be further governed by the below terms and conditions. Accordingly, this approval is valid until November 5, 2025.

As authorized by 310 CMR 32.13(5)(c), MassDEP may require sampling and analysis for additional substances before or after issuance of the AOS. Such a requirement may be either at the request of another state, the municipality in which the product is to be land applied, or at the initiative of MassDEP upon review of information submitted in compliance with 310 CMR 32.13(1) or any other information. Based on data collected by other states for biosolids products, MassDEP has concerns about the potential for Per- and Polyfluoroalkyl Substances (PFAS) in your product. Therefore, MassDEP has included PFAS testing in this AOS (see below General Requirements).

#### A. GENERAL REQUIREMENTS

 The Type 1 classification applies to the product manufactured at the MWRA Biosolids Processing Facility. Any material not meeting these requirements is prohibited for land application in the Commonwealth of Massachusetts unless previously approved by MassDEP.

Sampling and analysis shall include the substances listed at 310 CMR 32.13(5), PFAS (as described below), and sampling required by 40 CFR Part 503.

#### a. PFAS substances shall include the following:

Compound		CAS#
Perfluorobutanoic Acid	PFBA	375-22-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluorononanoic Acid	PFNA	375-95-1

Perfluorodecanoic Acid	PFDA	335-76-2
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorobutanesuifonic Acid	PFBS	375-73-5
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorodecanesulfonic Acid	PFDS	335-77-3

- b. Information about testing PFAS in Residuals is available at the following website: <a href="https://www.mass.gov/info-details/testing-of-pfas-in-wastewater-and-residuals">https://www.mass.gov/info-details/testing-of-pfas-in-wastewater-and-residuals</a>. This website also includes a list of approved laboratories to perform this testing.
- c. PFAS testing shall include analysis of the solid product using appropriate analytical and quality control methods. Results received from testing using the approved methodologies shall be submitted to MassDEP for a quality assurance and quality control review and approval as soon as they are received from the laboratory. Please submit results to massdep.residuals@mass.gov unless otherwise directed by MassDEP.
- d. In the event that you plan to change the contract laboratory providing PFAS analytical services, MWRA must contact the residuals program at <a href="massdep.residuals@mass.gov">massdep.residuals@mass.gov</a> to provide information about the laboratory that you intend to use for your PFAS testing. Because there is no EPA-approved method for testing residuals for PFAS, MassDEP has established a process to ensure that a laboratory will use appropriate analytical methods and quality control. MassDEP must review and approve the laboratory's proposed methodologies, including detailed Standard Operating Procedures (SOPs) for PFAS testing of residual samples, and the Initial Demonstration of Capability (IDC) data demonstrating acceptable accuracy and precision in the analysis of PFAS-spiked blank Ottawa sand using the laboratory's SOP, before testing can occur.
- e. Additionally, in preparation for sampling, AOS holders may want to review the below PFAS sampling guidance developed by the state of Michigan. As explained in the document, there are potential sources of PFAS cross-contamination in the typical sampling environment and there are actions that can be taken to reduce the risk of contamination.

## https://www.michigan.gov/documents/pfasresponse/General PFAS Sampling Guidance 634597 7.pdf

f. Each AOS is required to collect samples for laboratory testing as laid out in the most recent communication from MassDEP (emails from Oscar Pancorbo dated September 16 and 17, 2020, attached). Please contact the residuals program at massdep.residuals@mass.gov if you have a specific question on this issue.

- g. PFAS results shall be submitted to <u>massdep.residuals@mass.gov</u> both as a PDF of the laboratory report and as an Excel spreadsheet, unless directed otherwise.
- h. MassDEP expects that laboratories will confirm their lowest Minimum Reporting Limits (MRLs) for the analysis of target PFAS in residual samples according to the U.S. EPA protocol.
- Sampling for all parameters noted in 310 CMR 32.13(5) and in CFR Part 503 shall occur
  on a quarterly basis. Sampling for PFAS testing shall occur quarterly in the following
  months: December, March, June, and September.
- 3. MWRA shall submit an annual report to MassDEP by February 1 of each calendar year following the date of the AOS. The annual report shall include the records that the owner or operator is required to keep pursuant to 310 CMR 32.60(2)(a) and (b). Also, the annual report shall identify and include all chemical test data generated for PFAS, including but not limited to, PFAS data generated according to the requirements of the EPA or other states. An electronic copy of all PFAS data included with the annual report shall be submitted to the residuals program at massdep.residuals@mass.gov.
- 4. Renewal of the AOS requires submittal of an AOS renewal application six months before the expiration of the existing approval. A Type I AOS renewal application (WP 93) is located at the following website unless otherwise directed:

https://www.mass.gov/how-to/wp-93-renewal-of-type-i-approval-of-suitability-aos

### B. STORAGE, SALE, DISTRIBUTION, RECORD KEEPING, AND LABELLING

The storage, sale, distribution, record keeping, and labelling of the product manufactured at MWRA Biosolids Processing Facility for land application in the Commonwealth of Massachusetts must meet the requirements of 310 CMR 32.00. Note the attached labeling requirement regarding biosolids containing Molybdenum that is new to MassDEP regulation 310 CMR 32 as of 2016. This requirement can also be found at:

https://www.mass.gov/files/documents/2016/11/sz/mobiosolids.pdf.

#### C. REPORTS AND MONITORING DATA

1. Copies of all reports and monitoring data shall be submitted to the following locations:

James Barsanti, P.E.
Environmental Engineer
Massachusetts Department of Environmental Protection
205B Lowell Street
Wilmington, MA 01887

- 2. Copies of all PFAS data and other information related to PFAS shall also be submitted to <a href="massdep.residuals@mass.gov">massdep.residuals@mass.gov</a>.
- 3. Record Keeping: MWRA shall comply with the record keeping requirements of 310 CMR 32.60 (1), (2), and (3) including the submission to MassDEP of an annual report pursuant to section 32.60 (2) (c) which shall be due on February 1 of the calendar year following the date MassDEP issued the approval of suitability.

This approval is an action by MassDEP. If you are aggrieved of this action, you may request an adjudicatory hearing. A Notice of Claim for Adjudicatory Hearing must be made in writing within thirty (30) days of the date this approval was issued. Pursuant to 310 CMR 1.01 (6), the Notice of Claim shall state clearly and concisely the facts which are the grounds for the proceeding and the relief sought.

The Notice of Claim, along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00), must be mailed to:

Commonwealth of Massachusetts
MassDEP
PO Box 4062
Boston, MA 02211

The Notice will be dismissed if the filing fee is not paid, unless the appellant is exempt or is granted a waiver as described in 310 CMR 4.00.

Should you have any questions, please contact James Barsanti at 978-694-3253.

Sincerely,

James Barsanti, P.E.

Environmental Engineer

Wastewater Management Section

Kevin Brander, P.E.

Section Chief

Wastewater Management Section

cc:

Jennifer Wood, MassDEP, Boston

C. Mark Smith, MassDEP Office of Research and Standards

Ruth I. Jones, Quincy Public Health Commissioner

#### Attachments

Laboratory Procedures for Testing PFAS in Residuals

- DEP Email dated September 16, 2020
- DEP Email dated September 17, 2020

Template for PFAS Data - Transmitted to MWRA Electronically

Labeling Requirement and Additional Information Regarding Biosolids Containing Molybdenum

#### Wood, Jennifer (DEP)

From:

Wood, Jennifer (DEP)

Sent:

Wednesday, September 16, 2020 8:01 PM

To:

mcarignan@agresourceinc.com; shelagh.connelly@rmirecycles.com; april.sargent@rmirecycles.com; George.Belmont@caselia.com;

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kspyatt@tewksburytwp.net; CCousens@GLSD.org; Dave.Duest@mwra.com;

Cobrien@taunton-ma.gov, FSheppard@weymouth.ma.us;

jkazlauskas@bridgewaterma.org; dhickox@town.dartmouth.ma.us; bobk@rtgp.com; PGallagher@oceanspray.com; rbozikowski@gmail.com; tim.mosher@barnhardt.net;

jhubbard@ervingpapermill.com; bfurlon@hoosacwaterqualitydistrict.com;

wpcf.supt@montague-ma.gov; tom@amesburyma.gov;

northchelmsfordwater@outlook.com; bdoran@braintreema.gov; nathanwidell@comcast.net; TCusick@CityofNewburyport.com; cyndi.vaughn@rousselot.com; dharding@agresourceinc.com; philippe\_bourassa@cascades.com; ddnscoll@concordnh.gov;

Mary.Waring@casella.com; OsborneN@nashuanh.gov; april.sargent@rmirecycles.com; mcangnan@agresourceinc.com; lbaroldi@SYNAGRO.com; vhalmen@ipswichutilities.org;

MRyan@nefcobiosolids.com; Carl Pawlowski (Carl.Pawlowski@mwra.com);

marnold@town.dartmouth.ma.us; jacob.smith@erving-ma.gov; mquatromoni@sitecenv.com; mcarignan@agresourceinc.com;

dharding@agresourceinc.com; lan.Gunniss@rousselot.com; mphartford@verizon.net Vakalopoulos, Catherine (DEP); alex.pinto@dem.ri.gov; Anthony.Drouin@des.nh.gov; Jim.C.Pollock@maine.gov; Eamon.Twohig@vermont.gov; Boyer, David (DEP); Griffin, Sean (DEP); Brander, Kevin (DEP); Rondeau, Richard (DEP); Gould, Jeffrey (DEP); DiSalvio, Dan (DEP); Sokop, Matthew (DEP); McLaughlin, James (DEP); Dakers, Mark (DEP); Postale, Brian (DEP); Fasulo, Scott (DEP); Brander, Kevin (DEP); Bourcier, John (DEP); Rondeau, Richard (DEP); Gould, Jeffrey (DEP); Fasulo, Scott (DEP); Kurpaska, Daniel J (DEP); Jennifer

Lichtensteiger (jlichtensteiger@neiwpcc.org); Ned Beecher

(ned.beecher@nebiosolids.org)

Subject:

Cc:

FW: Laboratory Procedures for Testing PFAS in Residuals

Attachments:

aos-pfas-testing-20200810\_rousselot-3-wwtp.pdf; Summary of Residuals PFAS Data.xlsx

Hi folks,

MassDEP provides the below clarification regarding PFAS sampling methodology.

Please let Oscar and me know if you have questions. Our contact information is below.

Thank you for your patience in this matter.

Jennifer Wood MassDEP Residuals Program

From: Pancorbo, Oscar (DEP) <oscar.pancorbo@mass.gov>

Sent: Wednesday, September 16, 2020 12:34 PM

To: Debby.Wilson@Eurofinset.com; jocchialini@alphalab.com; sknollmeyer@alphalab.com; bryan.vining@enthalpy.com; JaneHuber@eurofinsUS.com; MelissaMcDermott@eurofinsUS.com;

Stephanie.Pollen@bvlabs.com; KBraga@thielsch.com

Cc: Langley, Lealdon (DEP) <lealdon.langley@mass.gov>; Wood, Jennifer (DEP) <jennifer.wood@mass.gov>; Smith, C.Mark (DEP) <c.mark.smith@mass.gov>; Vakalopoulos, Catherine (DEP) <catherine.vakalopoulos@mass.gov>; Touet, Lisa (DEP) Lisa.touet@mass.gov>; King, Susannah (DEP) <susannah.king@mass.gov>
Subject: Laboratory Procedures for Testing PFAS in Residuals

Dear Representatives of Laboratories Approved for PFAS Analysis in Residuals,

As you know, MassDEP approved your laboratory for the analysis of selected per- and polyfluoroalkyl substances (PFAS) in residuals from facilities that distribute/sell residuals in Massachusetts under an Approval of Suitability (AOS).

In August 2020, MassDEP sent letters to all AOS holders requiring quarterly residuals PFAS testing. A sample of this letter is attached. The letter included the following statement regarding submittal of residual samples from each AOS holder for laboratory testing: "Each AOS is required to submit a primary and duplicate bottle to the laboratory, labeled as such in the chain of custody, as well as four extra bottles. For additional field quality control, AOS holders may choose to include field duplicate and field reagent blank (FRB) sampling."

MassDEP is providing the following clarification on the intent of this statement as well as additional information regarding MassDEP's expectations on residuals PFAS testing and reporting:

- MassDEP expects that the facility will provide "Primary" and "Field Duplicate" residual samples (each with unique field and laboratory IDs) to the laboratory and that the laboratory will test both of these samples for PFAS using the laboratory's analytical method SOP approved by MassDEP for residuals PFAS analysis.
- 2. The attached letter contained a typographical error. The field duplicate is a requirement, not an option.
- 3. MassDEP expects that with an extraction batch of 20 or fewer residual samples from one or more clients, the laboratory will select at least one of the residual samples as the Matrix Spike (MS) and MS Duplicate (MSD) or Laboratory Duplicate (LD) to be extracted, analyzed, and reported with the PFAS results for each of the residual samples in the extraction batch. MassDEP does not expect a facility to pay for these required QC samples even if the laboratory uses the facility's own residual sample for these QC analyses. The intent of the language in the quarterly sampling letter was for AOS facilities to provide adequate sample amount for either the primary or field duplicate residual sample in case that the MS and MSD or LD in an extraction batch is tested using that sample from an AOS holder. With the understanding that the amount of sample necessary varies depending on the aqueous nature of the residual, the amount of additional sample provided to the laboratory may vary and may include more than one container of the primary and/or field duplicate sample(s); note that the additional sample containers must be labeled with the same field and laboratory IDs as the corresponding primary or field duplicate sample.
- 4. An AOS holder may choose but is not required to submit a field reagent blank (FRB) with the primary and field duplicate residual samples for PFAS analysis. A field reagent blank (i.e., a reagent water sample that is transferred from one bottle to a clean bottle at a PFAS sampling site and is therefore exposed to the field environment) is used to determine if PFAS samples could have been contaminated in the field during the sampling process. Note that a trip blank (i.e., a reagent water sample in a sealed bottle that travels to the field and then back to the laboratory unopened with the field samples) is not necessary for PFAS analysis.
- 5. MassDEP expects that laboratory reports detailing PFAS in residuals will include analytical data for all applicable MS and MSD or LD performed in the same extraction batch(es) as the residual samples. Note that MassDEP (in consultation with Tetra Tech) is reviewing each laboratory report of residual PFAS analysis. Providing acceptable QA/QC data will be critical to the approval of residuals PFAS analytical data.

- 6. Residuals PFAS analytical data should be sent to MassDEP as both a PDF of the laboratory report and entered into the attached spreadsheet.
- 7. Send all residuals PFAS analytical data to the following email address: massdep.residuals@mass.gov
- 8. If you have any laboratory-related questions on residuals PFAS testing, please contact me at (978) 987-3187 or oscar.pancorbo@mass.gov. If you have any questions regarding the MassDEP residuals program/AOS holders, please contact Jennifer Wood at Jennifer.wood@mass.gov.

Please feel free to forward this email to personnel within and outside of your company, including clients who might be confused by the MassDEP residuals PFAS sampling and analysis requirements.

#### Sincerely,

Oscar C. Pancorbo, Ph.D. **Division & Station Director** Division of Environmental Laboratory Sciences Senator William X. Wall Experiment Station Massachusetts Department of Environmental Protection 37 Shattuck Street, Lawrence, MA 01843

24/7 Mobile: (978) 987-3187 Direct Line: (978) 242-1314

Oscar.Pancorbo@mass.gov

MassDEP web site: https://www.mass.gov/orgs/massachusetts-department-of-environmental-protection

WES web page: https://www.mass.gov/locations/william-x-wall-experiment-station-massdep

#### Wood, Jennifer (DEP)

From:

Pancorbo, Oscar (DEP)

Sent:

Thursday, September 17, 2020 4:47 PM

To:

jhubbard@ervingpapermill.com

Cc:

Vakalopoulos, Catherine (DEP); Wood, Jennifer (DEP); Smith, C.Mark (DEP)

Subject:

Re: Laboratory Procedures for Testing PFAS in Residuals

Hi Julie,

I am responding to the email below that you sent this morning to Jennifer Wood and others.

The multiple sample containers of Primary Sample or Field Duplicate Sample <u>must be labeled exactly the same</u> and must be listed on a single line of the chain-of-custody form with the column labeled # of containers filled in with the number of containers/bottles submitted for analysis (see example in table below). The laboratory will consider the multiple containers with the same Client Sample ID as extra amount of the same identical sample.

Laboratory Sample ID	Client Sample D	<b>Client Sample Description</b>	# of Containers		
XXXXX	Primary	Residual Type from Facility X	3		
XXXXXX	Field Duplicate	Residual Type from Facility X	3		

Let us know if you have any additional questions.

Thanks.

Oscar

Oscar C. Pancorbo, Ph.D.
Division & Station Director
Division of Environmental Laboratory Sciences

Senator William X. Wall Experiment Station

Massachusetts Department of Environmental Protection

37 Shattuck Street, Lawrence, MA 01843

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MassDEP web site: https://www.mass.gov/orgs/massachusetts-department-of-environmental-protection

WES web page: https://www.mass.gov/locations/william-x-wall-experiment-station-massdep

From: Wood, Jennifer (DEP)

Sent: Thursday, September 17, 2020 10:08 AM

To: Pancorbo, Oscar (DEP)

Cc: Vakalopoulos, Catherine (DEP)

Subject: FW: Laboratory Procedures for Testing PFAS in Residuals

Oscar,

Would you want to respond to Julie? Please cc me if you don't mind so I know how to respond to this question in the future.

Thank you! Jennifer

From: Julie Hubbard <jhubbard@ervingpapermill.com>

Sent: Thursday, September 17, 2020 10:06 AM

To: Wood, Jennifer (DEP) <jennifer.wood@mass.gov>; james.merchant@veolia.com

Cc: Vakalopoulos, Catherine (DEP) <catherine.vakalopoulos@mass.gov>

Subject: RE: Laboratory Procedures for Testing PFAS in Residuals

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Hello -

Please let me know if what I am thinking is correct:

We are submitting a total of 6 bottles of sample. Three of those bottles should be labeled "Primary Sample". The other three bottles should be labeled "Field Duplicate Sample".

So, do we need to provide some distinction between the 3 Primary Sample bottles, such as "Primary Sample 1", "Primary Sample 2", and "Primary Sample 3", and use this same type of designation on the Field Duplicates?

Or should we label them "Primary Sample" and then "Primary Sample spare#1" and "Primary Sample spare#2"?

Or, is just the designation of Primary Sample and Field Duplicate Sample sufficient, and let the lab decide which of the 3 bottles labeled Primary Sample they pick up and analyze for the primary sample, and then chose one of the bottles labeled Field Duplicate Sample to analyze?

I have not done this before, so I really need some direction on the specifics of this required labeling.

I have no questions regarding the FRB.

Thanks,

Julie Hubbard

From: Wood, Jennifer (DEP) [mailto:jennifer.wood@state.ma.us]

Sent: Wednesday, September 16, 2020 5:33 PM

To: james.merchant@veolia.com; Julie Hubbard <jhubbard@ervingpapermill.com>

Cc: Vakalopoulos, Catherine (DEP) < catherine.vakalopoulos@state.ma.us>

Subject: FW: Laboratory Procedures for Testing PFAS in Residuals

Jim and Julie,

Please see below information and let me know if you have questions.

Sincerely,

Jennifer Wood

From: Pancorbo, Oscar (DEP) < oscar.pancorbo@mass.gov>

Sent: Wednesday, September 16, 2020 12:34 PM

To: <a href="Debby.Wilson@Eurofinset.com">Debby.Wilson@Eurofinset.com</a>; <a href="jocchialini@alphalab.com">jocchialini@alphalab.com</a>; <a href="mailto:sknollmeyer@alphalab.com">sknollmeyer@alphalab.com</a>; <a href="mailto:bryan.vining@enthalpy.com">bryan.vining@enthalpy.com</a>; <a href="mailto:JaneHuber@eurofinsUS.com">JaneHuber@eurofinsUS.com</a>; <a href="mailto:MelissaMcDermott@eurofinsUS.com">MelissaMcDermott@eurofinsUS.com</a>;

Stephanie.Pollen@bvlabs.com; KBraga@thielsch.com

Cc: Langley, Lealdon (DEP) < lealdon.langley@mass.gov>; Wood, Jennifer (DEP) < jennifer.wood@mass.gov>; Smith, C.Mark (DEP) < c.mark.smith@mass.gov>; Vakalopoulos, Catherine (DEP) < c.therine.vakalopoulos@mass.gov>; Touet,

Lisa (DEP) < lisa.touet@mass.gov>; King, Susannah (DEP) < susannah.king@mass.gov>

Subject: Laboratory Procedures for Testing PFAS in Residuals

Dear Representatives of Laboratories Approved for PFAS Analysis in Residuals,

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  with unique field and laboratory IDs) to the laboratory and that the laboratory will test both of these
  samples for PFAS using the laboratory's analytical method SOP approved by MassDEP for residuals
  PFAS analysis.
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- 3. MassDEP expects that with an extraction batch of 20 or fewer residual samples from one or more clients, the laboratory will select at least one of the residual samples as the Matrix Spike (MS) and MS Duplicate (MSD) or Laboratory Duplicate (LD) to be extracted, analyzed, and reported with the PFAS results for each of the residual samples in the extraction batch. MassDEP does not expect a facility to pay for these required QC samples even if the laboratory uses the facility's own residual sample for these QC analyses. The intent of the language in the quarterly sampling letter was for AOS facilities to provide adequate sample amount for either the primary or field duplicate residual sample in case that the MS and MSD or LD in an extraction batch is tested using that sample from an AOS holder. With the understanding that the amount of sample necessary varies depending on the aqueous nature of the residual, the amount of additional sample provided to the laboratory may vary and may include more than one container of the primary and/or field duplicate sample(s); note that the additional sample containers must be labeled with the same field and laboratory IDs as the corresponding primary or field duplicate sample.
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the field environment) is used to determine if PFAS samples could have been contaminated in the field during the sampling process. Note that a trip blank (i.e., a reagent water sample in a sealed bottle that travels to the field and then back to the laboratory unopened with the field samples) is not necessary for PFAS analysis.

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Please feel free to forward this email to personnel within and outside of your company, including clients who might be confused by the MassDEP residuals PFAS sampling and analysis requirements.

#### Sincerely,

Oscar C. Pancorbo, Ph.D.
Division & Station Director
Division of Environmental Laboratory Sciences
Senator William X. Wall Experiment Station
Massachusetts Department of Environmental Protection
37 Shattuck Street, Lawrence, MA 01843
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WES web page: https://www.mass.gov/locations/william-x-wall-experiment-station-massdep



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

### Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

Charles D. Baker Governor

Karyn E. Polito Lieutenant Governor Matthew A. Beaton Secretary

Martin Suuberg

## Labeling Requirement and Additional Information Regarding Biosolids Containing Molybdenum

#### 1. Labeling

According to 310 CMR 32.40 (4):

"Sludge containing molybdenum shall be accompanied by a written label or bill of lading that states the following: "This product contains molybdenum. While the regulatory standard is generally protective, under certain site conditions, if used on soils growing crops that will be used to feed ruminant animals (e.g., cattle, sheep and goats) there is a small risk that molybdenosis could occur. This risk is greater for alkaline stabilized biosolids. Animal managers are advised to refer to additional information on the site conditions of concern and management options at <a href="http://www.mass.gov/eea/docs/dep/water/wastewater/a-thru-n/mobiosolids.pdf">http://www.mass.gov/eea/docs/dep/water/wastewater/a-thru-n/mobiosolids.pdf</a>." A statement indicating whether the biosolids have been alkaline stabilized shall also be included."

This requirement is for Type I sludge per 310 CMR 32.51 (d) and for Type II and III sludge per 310 CMR 32.52 (8).

#### 2. Additional Information

Ruminants (e.g. cattle, sheep and goats) are the animals most sensitive to molybdenum (Mo) toxicity, molybdenosis. Mo toxicity in ruminants is largely attributable to Mo induced copper (Cu) deficiency and can cause a range of health effects including changes in coloration and other coat characteristics, loss of weight, decreased milk production, decreased fertility and potential effects on the immune system. Use of biosolids containing Mo up to 40 mg/kg is unlikely to result in toxic Mo levels in ruminant forage in most circumstances. However, in certain situations, added Mo could lead to a small risk of Mo reaching levels in forage that could cause molybdenosis in ruminants following bulk biosolids applications. These situations are where the receiving site exhibits one or more of the following characteristics: habitually wet soils; a soil pH > 6; low bio-available copper; and/or high preexisting concentrations of Mo. In such situations, forages, in particular those predominated by legumes, may accumulate

sufficient Mo and insufficient copper following applications of biosolids to cause Mo related health effects in ruminants. Mo toxicity can be prevented by monitoring these animals for early signs of Mo toxicity and/or assessing forage copper:Mo ratios. In situations where the forage copper:Mo ratio is low (below a ratio of 3-4) or where signs of Mo toxicity or copper deficiency are noted, consideration should be given to supplementing the ruminant diet with copper. Copper supplementation is an effective treatment and can prevent or reverse adverse health effects in ruminants attributable to excess forage Mo. However, copper supplementation should be conducted only when needed as excess dietary copper can also cause adverse health effects in cattle.



Larry Hogan Governor

**Boyd Rutherford** Lieutenant Governor

Ben Grumbles Secretary

October 5, 2016

Mr. Jeffrey D. Rhodes City of Cumberland 57 North Liberty Street Cumberland, MD 21502

Dear Mr. Rhodes:

Enclosed is Maryland Sewage Sludge Utilization (SSU) Permit No. 2015-STF-5528, which is issued in accordance with your renewal application of August 11, 2015, and all subsequent revisions and addenda including your most recent submittal dated and received September 30, 2016.

Please note that this permit is subject to the enclosed terms and conditions. This permit may be appealed by filing a written request for a hearing within thirty (30) calendar days of receipt of this permit. The request should be addressed to Ms. Hilary Miller, Director, Land Management Administration, at the Department's address. You will subsequently be contacted regarding a hearing date. All permit hearings will be conducted in accordance with the Administrative Procedure Act. If no appeal is received within the specified time period, this will constitute acceptance of the terms and conditions of this permit.

If you have any questions, please call Mr. Nazeeh A. Freij, at (410) 537-3314.

Sincerely,

Allison Marong, Chief **Biosolids Division** 

Enclosure

cc:

Jenelle Mayer, Allegany County Health Department (w/encl.)

Craig Hartsock, Allegany County Soil Conservation District (w/encl.)

Hilary Miller

Brian Coblentz (w/encl.)

is Plang

# MARYLAND DEPARTMENT OF THE ENVIRONMENT



Governor

Land Management Administration • Resource Management Program 1800 Washington Boulevard • Suite 610 • Baltimore, Maryland 21230-1719 410-537-3314 • 800-633-6101 x3314 • www.mde.maryland.gov



# **Sewage Sludge Utilization Permit**

Number: 2015-STF-5528

**ISSUE DATE:** 

October 5, 2016

EXPIRATION DATE: October 4, 2026

Issued to:

The City of Cumberland

Authorizing:

The treatment and distribution of sewage sludge as specified in this permit

At:

The City of Cumberland Wastewater Treatment Plant, located at 400 Offut Street in

Allegany County, Maryland

This permit is renewed pursuant to the provisions of Title 9 of the Environment Article, Annotated Code of Maryland, and regulations promulgated thereunder, and is subject to the attached terms and conditions, and compliance with all applicable laws and regulations.

Hilary Miller, Director

Land Management Administration

This permit is granted in accordance with the referenced documents in Part I, and subject to the terms and conditions specified in Parts II and III of this permit as follows:

<u>Part I:</u> <u>Referenced Documents</u> - Permit application, plans, specifications, and other pertinent documents submitted to the Department:

- 1. Sewage Sludge Utilization (SSU) Permit Application for treatment and distribution and supporting documents submitted by City of Cumberland, dated December 3, 2009 and received on December 9, 2009.
- 2. Full scale (100%) engineering drawings submitted by Daniel O'Connell's Sons, dated June 11, 2010 and received on June 14, 2010.
- 3. Technical specifications book by Tighe & Bond submitted by Daniel O'Connell's Sons, dated January 12, 2010 and received on June 15, 2010.
- 4. Detail design calculations packet submitted by Daniel O'Connell's Sons, dated June 14, 2010 and received on June 15, 2010.
- 5. Additional supporting documents consisting of Operation and Maintenance Manual, Sampling and Analytical Testing Procedures, and Emergency Operations Plan submitted by New England Fertilizer Company (NEFCO), dated June 14, 2010 and received on June 15, 2010.
- 6. Additional supporting documents consisting of Enhanced Nutrient Removal Upgrade Joint Permit Application for the Cumberland WWTP, tax map and account identifier, site specific topographic map, soil map and data Allegany County Soil Survey 2009, soil map and data Allegany County Soil Survey 1977, and copies of sections from the Allegany County Geologic Map submitted by City of Cumberland, dated June 16, 2010 and received on June 18, 2010.
- 7. Draft Product Label for the NEFCO Cumberland Dried Sewage Sludge Pellets submitted by NEFCO, dated and received on August 5, 2010.
- 8. Final Product Label for the NEFCO Cumberland Dried Sewage Sludge Pellets submitted by NEFCO, dated and received on August 12, 2010.
- 9. Material Safety Data Sheet for BioRain (dust suppressant) submitted by NEFCO, dated August 8, 2005 and received on September 14, 2010.
- 10. SSU Permit Renewal Application submitted by City of Cumberland, dated August 11, 2015 and received on August 24, 2015.
- 11. Revised SSU Permit Renewal Application submitted by City of Cumberland, dated October 13, 2015 and received on October 22, 2015.

12. Revised Product Label for the NEFCO Cumberland Dried Sewage Sludge Pellets submitted by NEFCO, dated and received on September 30, 2016.

<u>Part II:</u> <u>Site Specific Conditions (Applicable to In State Class A Sewage Sludge Treatment Facility)</u> - conditions which amend all other permit conditions applicable to this activity should any discrepancies or conflicts exist.

#### A. Treatment Authorization:

- 1. This permit authorizes only the treatment of sewage sludge to be classified as Class A sewage sludge at the City of Cumberland Wastewater Treatment Plant (the "Facility") located at 400 East Offut Street in Cumberland, Allegany County, Maryland as specified in this facility's SSU Permit Application and its supporting documents referenced in Part I of this permit.
- 2. This permit authorizes only the treatment of sewage sludge to be classified as Class A sewage sludge with respect to Pathogens Reduction (PR) and Vector Attraction Reduction (VAR) in accordance with Class A-Alternative 5 of the Code of Federal Regulations 40 CFR 503.32(a)(7). The permittee shall ensure that the sewage sludge generated by the Facility is treated by a Process to Further Reduce Pathogens (PFRPs) by Heat Drying as follows:

Sewage sludge is dried by direct or indirect contact with hot gases to reduce the moisture content of the sewage sludge to 10% or lower. Either the temperature of the sewage sludge particles exceeds 80°C (176°F) or the wet bulb temperature of the gas in contact with the sewage sludge as the sewage sludge leaves the dryer exceeds 80°C (176°F), and either the density of fecal coliform in the sewage sludge is less than 1,000 Most Probable Number (MPN) per gram total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge is less than 3 MPN per 4 grams total solids (dry weight basis) at the time the sewage sludge is used or disposed, at the time the sewage sludge is prepared for sale or give away in a bag or other container for land application, or at the time the sewage sludge or material derived from the sewage sludge is prepared to meet the requirements in 40 CFR 503.10(b), 503.10(c), 503.10(e), or 503.10(f).

#### B. Sampling, Analysis, and Monitoring Requirements:

1. The permittee shall analyze the Class A sewage sludge for constituents specified in Code of Maryland Regulations (COMAR) 26.04.06.06A(2). Representative samples of the Class A sewage sludge that is generated by the Facility and is intended for distribution in Maryland shall be collected individually from the daily production. A composite of the treated sewage sludge shall be formed from two grab samples, collected over a 2-week timeframe and analyzed for the constituents listed in this Site Specific Condition in accordance with COMAR 26.04.06.06B, at a frequency of once

- every 60 days (6 times every year), excluding Polychorinated Biphenyls (PCBs), the analysis shall be performed at frequency of once every year.
- 2. The permittee shall analyze the Class A sewage sludge for pathogens as follows:

  Once a month, a single grab of Class A sewage sludge representative of the treatment process that is generated by the Facility shall be analyzed for pathogens to demonstrate that either the density of fecal coliforms in the sewage sludge is less than 1,000 Most Probable Number (MPN) per gram total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge is less than 3 MPN per 4 grams total solids (dry weight basis).
- 3. The sampling, sample handling, and analyses of analytical constituents required in this permit shall be performed in accordance with Code of Federal Regulations 40 CFR Part 503, which requires that testing for inorganic constituents be done in accordance with the most recent edition of the "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846. This publication lists procedures for sample handling and preservation, and categorizes the inorganic analytes as aqueous and solid samples. Aqueous samples are required to be preserved, while solid samples do not need to be preserved. The SW-846 does not define what is considered an aqueous sample as opposed to a solid sample. Sewage sludge sample that is less than one percent solids is considered to be a liquid. The liquid sample may be preserved in the lab, and any cooling of the sample is optional when it comes to analysis for the inorganic analytes.
- 4. All sample analyses shall be performed by an independent laboratory or another laboratory acceptable by the Department, using standards, procedures, and methods that are acceptable to the Department.
- 5. If analytical results for samples collected from the sewage sludge generated at this facility exceed the allowable levels or other health standard, the permittee shall notify the Department at (410) 537-3315 within 24 hours of receipt of the analytical data indicating this occurrence.
- 6. Upon detection of an exceedance of an allowable level or other health standard, the permittee shall investigate this exceedance within 48 hours following notification of the permittee of the exceedance of the standard by the analytical laboratory performing the original analysis of the sample which indicated the exceedance. The permittee shall also reanalyze within 7 calendar days the sewage sludge that exceeded the allowable level or other health standard to verify the initial detection.
- 7. All test results for nutrients, metals, and PCBs shall be reported in units of milligrams per kilogram (mg/kg), parts per million (ppm), or percent (%) on a dry weight basis.
- 8. Representative sample of the sewage sludge Class A product generated by the Facility and intended for marketing in Maryland, shall be analyzed for PCBs and reported to the Department in accordance with Table 1 of COMAR 26.04.06.05B(1). The

permittee may request in writing reduction of the PCBs sampling and monitoring frequency established in this permit.

#### C. Distribution Authorization:

- 1. The permittee is authorized to distribute treated sewage sludge as specified in the proposed Facility's SSU Permit Application and its supporting documents referenced in Part I of this permit.
- 2. This permit authorizes only the distribution in Maryland of treated bulk sewage sludge generated at the Facility that has been pasteurized in accordance with Site Specific Conditions A.2 of this permit.
- 3. Treated sewage sludge shall not exceed the following concentrations of constituents on a dry weight basis:

Constituent	Monthly Average Concentrations (milligrams per kilogram)					
Arsenic (As)	41					
Cadmium (Cd)	39					
Copper (Cu)	1,500					
Lead (Pb)	300					
Mercury (Hg)	17					
Nickel (Ni)	420					
Selenium (Se)	100					
Zinc (Zn)	2,800					
PCBs	10					

4. Treated sewage sludge to be distributed shall be free of liquid, will not cause undue risk to the environment or public health, safety, or welfare as may be determined by the Department, or in a manner that causes or likely to cause a discharge of constituents to the waters of the State. Shall be accompanied by labeling information representing the Class A end product generated by the Facility and approved in writing by the Department. Any changes to the Class A label shall be approved in writing by the Department prior to implementation.

- 5. Any contract entered into between the permittee or its agents and dealers to market or distribute treated sewage sludge shall contain provisions which assure compliance with all conditions of this permit including specific provisions requiring a marketing log of all initial sales of the product made by the permittee and proper labeling of the material.
- 6. When utilization options are not available during weekends and holidays, the permittee may leave dump trailers loaded with sewage sludge staged at the Facility for up to 48 hours before transport for distribution or disposal. The permittee shall use a medium to heavy-duty solid vinyl water proof tarp to cover open areas of the dump trailers so as to overlap splash guards by a minimum of one foot to prevent rain water intrusion.

#### Part III: General Conditions (Applicable to In State Sewage Sludge Treatment Facility)

#### A. Property Rights:

The issuance of this permit does not intend to convey any property rights in either real or personal property, or any exclusive privilege or franchise, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, State or local laws or regulations.

#### **B.** Suspension or Revocation:

- 1. In addition to other reasons authorized by statute or regulation, this permit may be suspended or revoked if the permittee lacks, or is in violation of, any federal, State or local approval necessary to conduct the activity authorized by this permit, including a local zoning or land use approval.
- 2. The Department may suspend, revoke, or modify this permit in whole or part, if the Department finds that:
  - a. False or inaccurate information was contained in the permit application, the information and forms required as part of the permit application, or the information required under the permit;
  - b. There has been a substantial deviation from:
    - i. The documents accepted by the Department as part of this permit application; or
    - ii. Any requirement established by the Department;
  - c. A representative of the Department has been denied entry to any area in which activities regulated by this permit are conducted or to any documents required to be maintained by this permit;
  - d. Conditions exist which constitute a health nuisance or danger to the environment, or result in persistent or repeated odors;
  - e. The permittee has been negligent or incompetent in the utilization of sewage sludge;
  - f. There is or has been a violation of the terms and conditions of this permit or any applicable State law or regulation; or
  - g. There is any other good cause.

3. The provisions of this permit are severable. If any provision of this permit shall be held invalid for any reason, the remaining provisions shall remain in full force and effect. If the application of any provision of this permit for any circumstance is held invalid, its application to other circumstances shall not be affected.

#### C. Civil or Criminal Liability:

Nothing in this permit shall be construed to preclude the institution of any legal action nor relieve the permittee from civil or criminal responsibilities and/or penalties for non-compliance with Title 9 of the Environment Article, <u>Annotated Code of Maryland</u>, or any federal, local or other State laws or regulations.

#### D. Facility Operations:

- 1. The permittee shall operate this facility in accordance with this facility's SSU Permit Application and its supporting documents referenced in Part I of this permit.
- 2. The permittee shall operate this facility in a manner as to prevent public health hazards, environmental degradation, or health nuisance conditions.
- 3. The permittee shall clearly identify any sewage sludge that fails to meet the standards established in this permit and identified in the SSU Permit Application and its supporting documents referenced in Part I of this permit. The permittee shall either recycle this sewage sludge into the process for further treatment or remove and handle this sewage sludge in accordance with a separate SSU Permit, and the following:
  - a. The sewage sludge generated shall not be utilized at this facility without a SSU Permit issued by the Department that authorizes all sewage sludge utilization activities; and
  - b. The permittee shall submit to the Department a written report within five working days following the removal of any sewage sludge that did not meet the referenced requirements. The written report shall include, but not limited to, the dates the sewage sludge was generated and removed from this facility, the quantity of sewage sludge removed, the destination and final utilization of the sewage sludge; and actions implemented to handle the sewage sludge that did not meet the referenced standards.
- 4. Treated sewage sludge authorized for distribution in Maryland may not be mixed with other materials without a SSU Permit issued by the Department that authorizes this activity.

- 5. The permittee shall control the dispersion of odors, prevent infestation by insects, rodents, or other vectors at this facility in accordance with this facility's SSU Permit Application and its supporting documents referenced in Part I of this permit. If applicable, the permittee shall maintain the sewage sludge loading and unloading areas in a sanitary condition, including washing and cleaning, as is necessary to control nuisance odors off-site. In the event of odor problems, the permittee shall take immediate steps as directed by the Department to alleviate the condition. The immediate steps may include, but are not limited to, additional liming and obtaining and maintaining a SSU Permit to transport the sewage sludge from this facility. Such a permit must be obtained before the sewage sludge may be transported from this facility.
- 6. The permittee shall control public access to this facility.
- 7. The permittee shall maintain a 1,000 foot buffer zone between the sewage sludge processing or storage area and the nearest inhabited off-site dwelling, except if otherwise specified by the Department in Part I of this Permit.
- 8. The permittee shall inspect all structural components of the treatment facility for degradation and damages and repair or replace as required.
- 9. The permittee shall employ additional sediment and erosion control measures at this facility, if required by the Department.
- 10. The permittee shall regularly wash and maintain all equipment used at this facility in a clean manner in order to avoid movement of sewage sludge or treated sewage sludge from this facility. The permittee shall maintain this facility and the surrounding road surfaces in a clean manner at all times.
- 11. The permittee shall maintain all equipment used for controlling dust generated during the sewage sludge treatment process in good working condition at all times. Should failure in the system occurs, the permittee shall contact the Department to report the situation and the permittee's plan of action.
- 12. The permittee shall ensure that the construction, operation, and maintenance of any required air quality and odor control systems are in compliance with all applicable rules and regulations and valid permits issued by the Department. Should any of these systems fail or shutdown for a long period of time, other than for routine maintenance; the permittee shall contact the Department to report the situation and the permittee's plan of action.

- 13. The permittee shall repair or replace equipment as required. The permittee shall obtain substitute equipment when breakdown or maintenance renders essential operating equipment inoperative for a period in excess of 24 hours during days of operation.
- 14. Any modification to this facility or its operating plans must be approved in writing by the Department prior to implementation. Modifications include, but are not limited to, any changes that alter a significant structural feature, operational procedure, element of design, or type of equipment described in this facility's SSU Permit Application and its supporting documents referenced in Part I of this permit.

#### E. Air Quality Control:

If applicable, the permittee shall comply with all of the air emissions standards, provisions, and requirements set forth in this facility's Operating Permit issued by the Department's Air and Radiation Management Administration.

#### F. As-Built Plans:

The permittee shall submit to the Department a certified copy of the as-built engineering plans and specifications after completion of the construction of structures as specified in this facility's SSU Permit Application and its supporting documents referenced in Part I of this permit.

#### G. Ground and Surface Water Monitoring Plan:

- 1. Except for a facility that is located within the perimeter of a wastewater treatment plant, the permittee shall monitor the ground and surface waters of the State around and beneath this facility in accordance with a Ground and Surface Water Monitoring (G&SWM) Plan approved by the Department.
- 2. The permittee shall conduct the G&SWM Plan in accordance with the following:
  - a. The permittee shall arrange for a qualified groundwater scientist to sample, or to oversee qualified environmental technicians who sample the wells in accordance with the following schedule:

Twice annually samples shall be collected and analyzed for the life of this facility for the following constituents and their Practical Quantitation Limits (PQL): pH, alkalinity, ammonia nitrogen, nitrate nitrogen, nitrite nitrogen, chloride, specific conductance, total dissolved solids, total coliforms, fecal coliforms, fecal streptococcus, total phosphorus, total organic carbon, calcium,

sulfate, turbidity, barium, cadmium, copper, chromium, mercury, nickel, lead, selenium, zinc, iron, and chemical oxygen demand. The Department may approve an alternative list of constituents or an alternative PQL;

- b. The sampling, sample handling, analyses and reporting of analytical parameters shall be performed in accordance with a G&SWM Plan approved by the Department;
- c. A qualified independent laboratory certified for water quality analysis by the Department or which is otherwise acceptable to the Department shall perform the analyses;
- d. A qualified groundwater scientist or professional shall evaluate the results and advise the permittee of any changes in water quality or any exceedance of the State and Federal Maximum Contaminant Level (MCL), Action Level or other health standard;
- e. If analytical results for samples collected from any wells associated with the treatment facility or surrounding properties exceed MCL, Action Level or other health standard for the first time, the permittee shall notify the Department in writing within 24 hours of receipt of the analytical data detecting this occurrence. Thereafter, if there is any significant increases above the MCL, Action Level, or other health standard, the permittee shall notify the Department in writing within 24 hours or receipt of the analytical data detecting this occurrence;
- f. Upon detection of the exceedance of an MCL, Action Level or other health standard for the first time, the permittee shall immediately resample the monitoring point(s) in which the standard was exceeded to verify the initial detection. This resampling shall occur as soon as possible, and no later than 30 days following notification of the permittee of the exceedance of the standard by the analytical laboratory performing the analysis of the sample which indicated the exceedance;
- g. Upon detection of the exceedance of an MCL, Action Level or other health standard after the resampling has taken place, the permittee shall immediately provide the Department with a plan of action to investigate and verify the source of contamination, and solutions to stop further contamination;
- h. All "J" values must be reported. "J" values are analytical results that are below the PQL but can be estimated; and

i. The requirements of 40 CFR §258 subpart E concerning groundwater monitoring and remediation shall be followed to the satisfaction of the Department.

#### H. Liquids Management:

- 1. Under no circumstances may any collected contaminated liquids be discharged by any means, except to the sanitary sewerage system or any permitted treatment facility, without written authorization from the Department. Any discharge to a sanitary sewerage system shall comply with the applicable provisions of the State's pre-treatment program, as described in COMAR 26.08.08.
- 2. Stormwater management at this facility shall be in accordance with the requirements of COMAR 26.17.02. Any point source discharge of pollutants to waters of the State is prohibited unless permitted by the Department.

#### I. Pollution Monitoring and Control Device Requirements:

- 1. All pollution control and ground and surface water monitoring systems (including stormwater management and sediment control systems) shall be installed in accordance with the manufacturer's recommendations and plans and specifications identified in this facility's SSU Permit Application and its supporting documents referenced in Part I of this permit. All pollution control and ground and surface water monitoring systems shall remain operational and shall be maintained in accordance with the provisions of this facility's SSU Permit Application and its supporting documents referenced in Part I of this permit.
- 2. Any incidence of damage to this facility's monitoring or pollution control systems shall be reported to the Department at (410) 537-3315 within two hours of the incident, or within two hours of the discovery of the damage if the damage occurred outside of working hours. All repairs needed to correct the damage shall be completed as soon as practical or as specified by the Department.
- 3. During construction and operation of this facility, the sediment and stormwater basins shall be cleaned out whenever (a) a clean-out elevation is reached; (b) construction is completed; (c) the amount of sediment reaches 50% capacity, and/or (d) as specified by the approved Sediment and Erosion Control Plan.

#### J. Roads:

The permittee shall provide all-weather access roads to this facility and to all required pollution control and monitoring systems and devices. Roads shall be maintained in such a manner so as to prevent the tracking of sewage sludge or soil onto any public road and/or to cause a public nuisance. If necessary, vehicles shall be cleaned prior to leaving this facility. Additional actions or facilities may be required at the discretion of the Department in order to control tracking of sewage sludge or soil.

#### K. Controlled Access:

Access to this facility shall be controlled at all times. Gates, fencing, and other ingress/egress controls around the perimeter of this facility shall be adequate to control access when this facility is not in operation. All gates shall be locked when this facility is unattended. Access shall be limited to those times when authorized personnel are on duty at this facility.

#### L. Recordkeeping and Reporting Requirements

- 1. The permittee shall maintain all records required by this permit for a period of ten years after the generation of the records. The records shall include, but not limited to, the following:
  - a. **An Annual Report**. The permittee shall submit to the Department an Annual Report regarding the activities of this facility for each calendar year ending December 31. The permittee shall submit the Annual Report to the Department by **February 15** of the following year on the form provided by the Department. The Annual Report shall include, but not limited to:
    - i. The sources, types, and quantity including documentation, of sewage sludge received and treated at this facility;
    - ii. The sewage sludge treatment methods;
    - iii. Process monitoring and operating information demonstrating that the treated sewage sludge meets the requirements as specified in this permit;
    - iv. The quantity, including documentation, of treated and untreated sewage sludge transported or distributed from this facility;
    - v. The dates of transportation and distribution of the treated and untreated sewage sludge from this facility;

- vi. The destinations and final utilization of the treated and untreated sewage sludge from this facility;
- vii. The time periods during which this facility is inoperational;
- viii. Descriptions of problems encountered and their solutions;
- ix. Other related information regarding this facility as required by this permit; and
- x. Other information requested by the Department;
- b. An Annual Generator Report. The permittee shall submit to the Department an Annual Generator Report for each calendar year ending December 31. The permittee shall submit the Annual Generator Report to the Department by January 31 of the following year on the form provided by the Department;
- c. Sewage Sludge Analysis Reports. The permittee shall submit to the Department Sewage Sludge Analysis reports for the sewage sludge chemical quality for constituents listed in this permit or an alternate list approved by the Department. The Sewage Sludge Analysis reports shall be submitted to the Department in accordance with a frequency as specified in this permit, or an alternate frequency approved by the Department. The Sewage Sludge Analysis reports shall include, but not limited to, a summary of the results of laboratory analysis including copies of all analysis of chemical quality of the treated sewage sludge generated at this facility for all constituents listed in this permit. In the event that a constituent exceeded the allowable level, a discussion or explanation of the exceedance shall be included; and
- d. A Semiannual Water Quality Report. If required, the permittee shall submit to the Department a Semiannual Water Quality Report within ninety days of the close of every first and third calendar quarters unless an alternative schedule is specified in the G&SWM Plan approved by the Department. Sampling shall occur during the period between January through March and July through September unless an alternative schedule is specified in the G&SWM Plan approved by the Department. The Semiannual Water Quality Report shall include, but not limited to:
  - i. A summary of the results of laboratory analysis including copies of all analysis of water quality of all constituents listed in this permit. In the event that a constituent

- exceeded the allowable level, a discussion or explanation of the exceedance shall be included;
- ii. A complete copy of the laboratory data and the qualified groundwater scientist or professional's interpretive findings shall be included in the water quality report referenced in this permit;
- iii. All data for each well must be summarized and presented in time series format. The data for each well must be presented in a spreadsheet so that the water quality data for each parameter for each well can be observed simultaneously. The discussion should emphasize historical trends in the data;
- iv. A statistical analysis methods in evaluating groundwater monitoring data;
- v. A copy of the most current topographic map generated by a survey performed as required in this permit shall be included in each semiannual report on water quality and shall depict the location of all monitoring wells and piezometers in existence at the time of the survey; and
- vi. A copy of a current groundwater contour map depicting the location of all monitoring wells from which groundwater data is collected shall be included in each semiannual report on water quality. Multiple aquifers shall be depicted on separate groundwater contour maps.
- 2. The permittee shall submit all reports required by this permit for each year this permit is in effect to:

Maryland Department of the Environment Land Management Administration Resource Management Program 1800 Washington Boulevard, Suite 610 Baltimore, Maryland 21230-1719

#### M. Transportation:

1. The permittee is authorized to transport sewage sludge as specified in this facility's SSU Permit Application and its supporting documents referenced in Part I of this permit.

- 2. Liquid sewage sludge (percent solids less than 15%) may be pumped and transported by pipeline. If liquid sewage sludge is transported by truck, rail, or barge, the permittee shall use closed watertight vessels such as tank trucks and railroad tank cars.
- 3. Sewage sludge cake with solids content between 15 and 20% may be transported in watertight boxes, such as dump trucks or dump trailers properly sealed to prevent leaks, or closed-body vehicles (such as concrete mixer trucks). When sewage sludge cake is transported in dump trucks or dump trailers, the permittee shall comply with the following standards:
  - a. The trucks shall be equipped with splash guards firmly attached horizontally at the front and rear of the trailer;
  - b. Each splash guard shall cover at least 25% of the trailer's open area and have no gaps through which sewage sludge may escape; and
  - c. A minimum two feet of freeboard shall be maintained between the sewage sludge and the top of the trailer unless the top of the trailer is completely sealed.
- 4. Sewage sludge cake with solids content between 20 and 35% may be transported in watertight boxes, such as dump trucks or dump trailers properly sealed to prevent leaks, or closed body vehicles (such as concrete mixer trucks). When sewage sludge cake is transported in dump trucks or dump trailers, the permittee shall comply with the following standards::
  - a. The permittee shall ensure that the transporting trucks are equipped with metal splash guards firmly welded horizontally to the front and rear body of the trailer. Each splash guard shall cover at least four feet of the length of the trailer. No gaps through which sewage sludge may escape shall exist between the splash guards and the trailer body; and
  - b. A medium to heavy-duty solid vinyl tarp shall cover the open area of the trailer and shall overlap the splash guards horizontally by a minimum of one foot. The tarp shall be drawn tightly across the top of the trailer and be firmly held in place with straps that are attached to ratchets bolted to the trailer. The tarp shall cover the top of the trailer so that there is no vertical gap through which sewage sludge may escape between the tarp and the sides of the trailer, or the tarp and the splash guards.

- c. For sewage sludge cake with solids content between 20 and 25%, a minimum of two feet of freeboard must still be maintained between the sewage sludge and the top of the transport vehicle.
- d. For sewage sludge cake with solids content between 25 and 35%, a minimum of one foot of freeboard must be maintained between the sewage sludge and the top of the transport vehicle.
- 5. Dried sewage sludge (percent solids greater than 35%) may be transported in open boxes, such as dump trucks, which are properly sealed to prevent leakage. The permittee shall cover the trucks with tarps or the equivalent.
- 6. The permittee shall clean the transport vehicle(s) on site to prevent drag-out of dirt or sewage sludge onto public roads. In the event dirt or sewage sludge is tracked onto the roads, the permittee shall immediately initiate clean-up procedures.
- 7. The permittee shall have available in the cab of each transport vehicle(s) a copy of page one of this SSU Permit, and a copy of the sewage sludge analysis report that was submitted to the Department as part of the application for this permit.

#### N. Spill Control:

- The permittee shall report to the Department, within one hour of becoming aware of its occurrence, any spills or unauthorized discharges of sewage sludge occurring either in transit or due to site conditions at either (410) 537-3315 during working hours, or at (866) 633-4686 during non-working hours.
- 2. In the event of a spill, the permittee shall ensure that cleanup procedures are initiated as soon as possible, but no later than two hours after becoming aware of the spill. The permittee shall complete the cleanup to the satisfaction of the Department.

#### O. Right of Entry:

The permittee shall ensure that the Secretary of the Maryland Department of the Environment, or the local health official, or their authorized representatives are permitted, at reasonable times and upon presentation of credentials to:

- 1. Enter upon the permittee's premises or where any records are required to be kept under the terms and conditions of this permit;
- 2. Have access to and copy any records required to be kept under the terms and conditions of this permit;

- 3. Inspect any collection, transport vehicles, treatment, pollution management, or control facilities required under this permit;
- 4. Perform any activities to determine compliance status with the terms and conditions of this permit or the applicable regulations; and
- 5. Obtain any photographic documentation or evidence.

#### P. Application for Renewal:

At least two calendar weeks before the expiration date of this permit, unless the Department has granted permission for a later date, the permittee shall submit an application for a permit renewal or notify the Department of the intent to cease operating by the expiration date. In the event that a timely and complete permit renewal application has been submitted and the Department is unable, through no fault of the permittee, to issue a permit renewal before the expiration date of this permit, the terms and conditions of this permit are automatically continued and remain fully effective and enforceable until a new permit is issued or a determination is made on the status of the renewal application.

#### Q. Transfer of Permit or Ownership:

- 1. This permit is only valid for the permittee named and may not be transferred to another entity. In order for a new entity to become the permittee for this activity, the new entity must first obtain a new SSU Permit from the Department.
- 2. Within 30 days of any change in control or ownership of the property, the permittee shall provide the succeeding owner(s), by certified mail, with a copy of the owner's written authorization signed by the current legal owner(s), a copy of this permit, and notify the succeeding owner(s) of any outstanding permit noncompliance. At the same time, the permittee shall provide the Department with a copy of the notification.

#### R. Compliance:

- 1. The permittee shall comply with the terms and conditions of this permit, and with all applicable federal, local and State laws and regulations.
- 2. If for any reason the permittee does not comply or is unable to comply with any of the terms or conditions of this permit, the permittee shall notify the Department at (410) 537-3315 on the same day or on the next working day, following any noncompliance. Within five (5) working days after this notification, the permittee shall provide the Department with the following information in writing:

- a. Description of the noncompliance, including dates, time, and type of noncompliance;
- b. Cause of the noncompliance;
- c. Anticipated time the noncompliance is expected to continue or if such condition has been corrected;
- d. Steps taken by the permittee to correct the noncompliance; and
- e. Steps to be taken by the permittee to prevent recurrence of the noncompliance.
- 3. If the permittee discovers through any means, including notification by the Department, that a noncompliance with any condition of this permit has occurred, the permittee shall immediately take all necessary steps to eliminate the condition of noncompliance and to minimize the adverse impact on public health, safety, welfare, or the environment.
- 4. If the permittee discovers that a noncompliance with any condition of this permit has affected the public health, safety, welfare, or the environment, the permittee shall immediately notify the Department.

#### S. Severability:

If any provision of this permit shall be held invalid for any reason, the remaining provisions shall remain in full force and effect, and such invalid provision shall be considered severed and deleted from this permit.

#### T. Signatory Requirements:

All applications, request for modifications or transfer, renewal requests, reports, or information submitted to the Department shall be signed and verified in accordance with Section 1-201 of the Environment Article, <u>Annotated Code of Maryland</u>, by the permittee or authorized representative of the permittee as being true.

#### MARYLAND DEPARTMENT OF THE ENVIRONMENT

Land Management Administration • Resource Management Program 1800 Washington Boulevard • Suite 610 • Baltimore, Maryland 21230-1719 410-537-3314 • 800-633-6101 x3314 • www.mde.maryland.gov

#### Sewage Sludge Utilization (SSU) Permit Annual Report

to /\_/

Exp. Date:

Reporting period \_\_\_\_/\_/

SSU Permit #:

Permittee:	SSU Permit #:	Exp. Date:
		dditional information, please call the Department following each year the SSU Permit is in effect.
	Maryland Department of the En Land Management Administ Resource Management Pro 1800 Washington Blvd, Suit Baltimore MD 21230-17	tration gram te 610
Please check the applicab	ole permit type and provide the required inform	nation on the established report form.
☐ Transportation Perm	it	
□ Disposal or Alternati	ve Utilization at a Municipal Landfill Permi	it
Quantity of sewage sludge	ge transported from the facility and its final uti	lization - Please use Table 2 on Page 3.
Destination Name:		County:
	where the sewage sludge is being transported	to/disposed at)
Destination Address:		
☐ Composting Facility I☐ Treatment Facility Po		and the second
	ncineration Facility Permit	
☐ Marketing Permit	•	
□ Storage Facility Perm		1 10 - 10 1
□ Distribution Facility	Permit	
Facility Name:		County:
Facility Address:		
	tity of sewage sludge received to be composted duse the origination facility(ies) as the "Sewa	
your facility as the "Sew both composted/treated a		
Description of problems of inoperational	encountered and their solutions (including time	e periods which the facility was
(please attach separate pa	age if more space is needed)	

Form Number: MDE/LMA/PER.14 Date: May 20, 2015

TTY Users: 1-800-735-2258

□ Innovative Permit □ Research Permit	
Site Name:	County:
Site Address:	<del></del>
Please attach the current status/results of the project.	
Sources, types, and quantity of sewage sludge utilized – Pleas facility(ies) as the "Sewage Sludge Source".	e use Table 1 on Page 3 and use the origination
Quantity of sewage sludge transported from the site – Please v Sludge Source". Please provide information on both utilized a	
Description of problems encountered and their solutions (incluinoperational	
(please attach separate page if more space is needed)	

#### Ta

- Source: The permitted sewage sludge source(s) (Wastewater Treatment Plant, Lagoon, etc) as described above and also specified in Table 1 and Table 2. Please use only 1 source per line.
- Quantity: List the quantity of sewage sludge received, transported, or distributed in wet tons (WT) as well as dry tons (DT), as specified in Table 1 and Table 2. Total WT are tallied by weight tickets or converted from Gal to WT and DT. Use additional sheet or provide copy of records to support this information.
- % Solids: List the average percent solids of sewage sludge at time of receiving, transportation, or based on recent sewage sludge analysis, as specified in Table 1 and Table 2.
- Treatment Method: Please indicate the sewage sludge treatment method (Untreated, Lime Stabilized, Anaerobically digested, Heat dried, etc...), as specified in Table 1 and Table 2.
- Destination: List the site, County, and State that received the sewage sludge, as specified in Table 2.
- Utilization: Final Utilization of the material (examples: further treatment, seeding, distributed to public, etc...), as specified in Table 2.

#### **Conversions Formulas:**

To convert Gal to Ib;  $Ib = (total gallons) \times (8.34)$ To convert Ib to WT;  $WT = (weight in pounds) \div (2000)$ To convert WT to  $DT = (WT) \times (\% Solids)$ 

contents of this document are by the Maryland Department	true to the best of my knowledge, informati	to solemnly affirm under the penalties of perjury, that the ion, and belief. Information in this form is subject to audit I hereby authorize the representatives of the Department, provided in this form.
Name (Printed)	Title	Representing (Town, Company,)
Signature	Date	Phone Number
Fax Number	Email Address	

Form Number: MDE/LMA/PER.14

Date: May 20, 2015 TTY Users: 1-800-735-2258

Table 1: Applicable to Sewage Sludge Composting, Treatment, Distribution and Marketing Permits, or related Permitted Facilities.

Prior Tre How sewage sludge was treated prior Class B treatment standards? e.g. un.	to receiving or meeting Class A or	Sewage Sludge Received for Treatmen			
Sewage Sludge Source(s)	Treatment Method	Amount (Wet Tons)	% Solids		

Table 2: For All SSU Permits Listed On Page 1 and 2

Sewage Sludge Source(s) Indicate source name even if "0" was hauled or received for treatment, storage, etc	Treatment Method e.g. raw, composted, pelletized, aerobically digested, etc	Av. % Solids	Total Wet Tons Utilized	Total Dry Tons Utilized	Sewage Sludge Utilization Destination (List the site and indicate County and State)	Date of Utilization e.g. when was distributed, hauled, stored, etc	Final Utilization e.g. distributed, hauled, incinerated, stored, etc
							-
1							

<sup>\*</sup> Please attach additional copies of table as needed

Form Number: MDE/LMA/PER.14

Date: May 20, 2015 TTY Users: 800-735-2258

#### **PERMIT NO. MI0022802**

# STATE OF MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

## AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, 33 U.S.C., Section 1251 *et seq.*, as amended; Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA); Part 41, Sewerage Systems, of the NREPA; and Michigan Executive Order 2011-1.

#### **City of Detroit Water and Sewerage Department**

735 Randolph Detroit, MI 48226

and

#### **Great Lakes Water Authority**

735 Randolph Detroit, MI 48226

are authorized to discharge from the **Great Lakes Water Authority Water Resource Recovery Facility** located at

9300 W. Jefferson Detroit, MI 48209

#### designated as GLWA WRRF

to the receiving water named the Detroit River and the Rouge River, and from combined sewer overflow facilities to the receiving waters named the Detroit River, the Rouge River, and Conner Creek in accordance with effluent limitations, monitoring requirements, and other conditions set forth in this permit.

This permit is based on a complete application submitted on March 29, 2017 and amended through May 25, 2017.

**This permit takes effect on July 1, 2019**. The provisions of this permit are severable. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term in accordance with applicable laws and rules. On its effective date, this permit shall supersede National Pollutant Discharge Elimination System (NPDES) Permit No. MI0022802 (expiring October 1, 2017).

This permit and the authorization to discharge shall expire at midnight on **October 1, 2022**. In order to receive authorization to discharge beyond the date of expiration, the permittees shall submit an application that contains such information, forms, and fees as are required by the Michigan Department of Environment, Great Lakes, and Energy (Department) by **April 4, 2022**.

**Issued:** June 28, 2019

Original signed by Christine Alexander
Christine Alexander, Manager
Permits Section
Water Resources Division

PERMIT NO. MI0022802 Page 2 of 71

#### PERMIT FEE REQUIREMENTS

In accordance with Section 324.3120 of the NREPA, the permittees shall make payment of an annual permit fee to the Department for each October 1 the permit is in effect regardless of occurrence of discharge. The permittees shall submit the fee in response to the Department's annual notice. The fee shall be postmarked by January 15 for notices mailed by December 1. The fee is due no later than 45 days after receiving the notice for notices mailed after December 1.

**Annual Permit Fee Classification:** Municipal Major, 500 MGD or greater (IP)

In accordance with Section 324.3132 of the NREPA, the permittees shall make payment of an annual biosolids land application fee to the Department if the permittees land applies biosolids. In response to the Department's annual notice, the permittees shall submit the fee, which shall be postmarked no later than January 31 of each year.

#### **CONTACT INFORMATION**

Unless specified otherwise, all contact with the Department required by this permit shall be made to the Southeast Michigan District Office of the Water Resources Division. The Southeast Michigan District Office is located at 27700 Donald Court, Warren, MI, 48092-2793, Telephone: 586-753-3700, Fax: 586-751-4690.

#### CONTESTED CASE INFORMATION

Any person who is aggrieved by this permit may file a sworn petition with the Michigan Administrative Hearing System within the Michigan Department of Licensing and Regulatory Affairs, c/o the Michigan Department of Environment, Great Lakes, and Energy, setting forth the conditions of the permit which are being challenged and specifying the grounds for the challenge. The Department of Licensing and Regulatory Affairs may reject any petition filed more than 60 days after issuance as being untimely.

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#### **PARTI**

#### Section A. Limitations and Monitoring Requirements

#### 1. Effluent Limitations, Monitoring Point 049F

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittees are authorized to discharge treated municipal wastewater from Monitoring Point 049F through Outfall 049 (DRO). Outfall 049 (DRO) discharges to the Detroit River. Such discharge shall be limited and monitored by the permittees as specified below.

Until the initiation of operation of the Rouge River Outfall (RRO) Disinfection Project, this discharge shall consist of secondary treated municipal wastewater and additional primary treated municipal wastewater up to the hydraulic capacity of Outfall 049 (DRO). After initiation of operation of the RRO Disinfection Project, this discharge shall consist of secondary treated municipal wastewater typically, but primary treated municipal wastewater and additional secondary treated municipal wastewater up to the hydraulic capacity of Outfall 049 (DRO) during wet weather events. During such wet weather events, the permittees are approved to discharge primary treated municipal wastewater from 049A thorough Outfall 049 (DRO).

Whenever Outfall 049 (DRO) is out of service for repairs, the permittees may discharge through Outfall 050 (RRO). All effluent authorized for discharge from Outfall 049F, and the monitoring, limitations and other requirements specified below shall apply to the discharge through Outfall 050 (RRO) unless otherwise specified. At least 10 days in advance of scheduled maintenance and within 24-hours after initiation of diversion due to emergency conditions, the permittees shall notify the Department of the reason for the diversion and the expected duration of the diversion.

<u>Parameter</u>			imits for Loading Daily	<u>Units</u>	Qua	ximum L lity or Co 7-Day			Monitoring <u>Frequency</u>	•
Flow	(report)		(report)	MGD					Daily	Report Total Daily Flow
Fecal Coliform Bact	eria				200	400		cts/100 ml	Daily	Grab
Total Residual Chlo	rine						0.11	mg/l	Daily	Grab
Oil & Grease						15		mg/l	Daily	Grab
Total Polychlorinate	d Biphenyls	s (PCBs)								
Aroclor 1016							(report)	μg/l	Weekly	24-Hr Composite
Aroclor 1221							(report)	μg/l	Weekly	24-Hr Composite
Aroclor 1232							(report)	μg/l	Weekly	24-Hr Composite
Aroclor 1242							(report)	μg/l	Weekly	24-Hr Composite
Aroclor 1248							(report)	μg/l	Weekly	24-Hr Composite
Aroclor 1254							(report)	μg/l	Weekly	24-Hr Composite
Aroclor 1260							(report)	μg/l	Weekly	24-Hr Composite
				Ma	aximum PC	В				
0144					<u>Aroclor</u>			//	NA 4le le .	0
See I.A.1.g.					<0.1			μg/l	Monthly	See I.A.1.g.
Acute Toxicity							(report)	$TU_A$	Quarterly	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5)										
			(report)	lbs/day			(report)	mg/l	Daily	24-Hr Composite
Ammonia Nitrogen (	(as N)		(report)	lbs/day	(report)		(report)	mg/l	Daily	24-Hr Composite
Available Cyanide			(report)	lbs/day			(report)	μg/l	Monthly	Grab

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Perfluorooctane sulfo	onate (PFOS (report)	5) 	(report)	lbs/day	(report)	 (report)	ng/l	Quarterly G	irab
Perfluorooctanoic ac	id (PFOA) (report)		(report)	lbs/day	(report)	 (report)	ng/l	Quarterly G	irab
Total Copper			(report)	lbs/day		 (report)	μg/l	Quarterly 2	4-Hr Composite
					Minimum <u>Daily</u>	Maximum <u>Daily</u>			
рН					6.0	 9.0	S.U.	Daily	Grab
Dissolved Oxygen					(report)	 	mg/l	Daily	Grab

The following design flow was used in determining the above limitations, but is not to be considered a limitation or actual capacity: a combined 930 MGD of secondary treated effluent.

#### a. Narrative Standard

The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, or deposits as a result of this discharge in unnatural quantities which are or may become injurious to any designated use.

#### b. Sampling Locations

The sampling locations for the pollutants indicated in Part I.A.1. of this permit shall be representative of the effluent and consistent with the locations approved by the Department. The Department may approve alternate sampling locations that are demonstrated by the permittees to be representative of the effluent.

#### c. Quarterly Monitoring

Quarterly samples shall be taken during the months of January, April, July, and October. If the facility does not discharge during these months, the permittees shall sample the next discharge occurring during the period in question. If the facility does not discharge during the period in question, a sample is not required for that period. For any month in which a sample is not taken, the permittees shall enter "\*G" on the Discharge Monitoring Report (DMR).

#### d. Total Residual Chlorine (TRC)

Compliance with the TRC limit shall be determined on the basis of one or more grab samples. If more than one (1) sample per day is taken, the additional samples shall be collected in near equal intervals over approximately eight (8) hours. The samples shall be analyzed immediately upon collection and the average reported as the daily concentration. Samples shall be analyzed in accordance with Part II.B.2. of this permit.

- e. Monitoring Frequency Reduction for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic Acid (PFOA)
  - After the submittal of 24 months of data, the permittee may request, in writing, Department approval of a reduction in monitoring frequency for PFOS and/or PFOA. This request shall contain an explanation as to why the reduced monitoring is appropriate. Upon receipt of written approval and consistent with such approval, the permittee may reduce the monitoring frequency indicated in Part I.A.1. of this permit. The monitoring frequency for PFOS and/or PFOA, shall not be reduced to less than annually. The Department may revoke the approval for reduced monitoring at any time upon notification to the permittee.
- f. Analytical Methods and Quantification Levels for Available Cyanide and Total Copper The sampling procedures, preservation and handling, and analytical protocol for compliance monitoring for Available Cyanide shall be in accordance with EPA Method OIA-1677. The quantification level for Available Cyanide and Total Copper shall be 2.0 µg/l and 1.0 µg/l respectively unless a higher level is appropriate because of sample matrix interference. Justification for higher quantification levels shall be submitted to the Department within 30 days of such determination. Upon approval from the

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Department, the permittees may use alternate analytical methods (for parameters with methods specified in Title 40 of the Code of Federal Regulations (CFR), Part 136, the alternate methods are restricted to those listed in 40 CFR, Part 136).

g. Limits Below the Quantification Level – Total Polychlorinated Biphenyls (PCBs)
The sampling procedures, preservation and handling, and analytical protocol for compliance monitoring
for Total PCBs shall be in accordance with EPA Method 608.3. Upon approval from the Department,
the permittees may use alternate analytical methods (for parameters with methods specified in 40 CFR,
Part 136, the alternate methods are restricted to those listed in 40 CFR, Part 136). The quantification
level shall be 0.1 ug/l unless a higher level is appropriate because of sample matrix interference.
Justification for a higher quantification level shall be submitted to the Department within 30 days of such
determination.

The water quality-based effluent limitation for Total PCBs is  $2.6 \times 10^{-5} \, \mu g/l$  ( $2.0 \times 10^{-4} \, lbs/day$ ) maximum monthly average. This is less than the quantification level. Control requirements are therefore established consistent with R 323.1213. **The discharge of any individual aroclor at or above the quantification level of 0.1 ug/l is a specific violation of this permit.** If concentrations of all aroclors representing a monitoring period are less than their quantification levels, the permittees will be considered to be in compliance with the permit for the monitoring period that the analyses represent, provided that the permittees are also in full compliance with the Pollutant Minimization Program for Total PCBs set forth in Part I.A.10 of this permit. For the purpose of reporting on the Daily tab of the DMR, individual aroclor results less than the quantification level shall be reported as "<0.1." For the purpose of reporting on the Summary tab of the DMR, the value reported under "Maximum PCB Aroclor" shall be the highest aroclor concentration observed during the monitoring period. This permit condition does not authorize the discharge of PCBs at levels that are injurious to the designated uses of the waters of the state or that constitute a threat to the public health or welfare.

#### h. Acute Toxicity Requirements

Test species shall include *Ceriodaphnia dubia*. Testing and reporting procedures shall follow procedures contained in EPA-821-R-02-012, "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (Fifth Edition). When the effluent ammonia nitrogen (as N) concentration is greater than 5 mg/l, the pH of the toxicity test shall be maintained at the pH of the effluent at the time of sample collection. The acute toxic unit (TU<sub>A</sub>) value for **each species tested** shall be reported on the DMR. For **each species not tested**, the permittees shall enter "\*W" on the DMR. Completed toxicity test reports for each test conducted shall be retained by the permittees in accordance with the requirements of Part II.B.5. of this permit and shall be available for review by the Department upon request. Toxicity test data acceptability is contingent upon the validation of the test method by the testing laboratory. Such validation shall be submitted to the Department upon request.

The Department will review the toxicity data submitted by the permittees to determine if the acute toxicity requirements of R 323.1219 are being satisfied.

- 1) If the data indicate persistent exceedance of the acute toxicity requirements of R 323.1219, upon written notification by the Department, the following conditions apply. Within 90 days of the above notification, the permittees shall implement a Toxicity Reduction Evaluation (TRE). The objective of the TRE shall be to reduce the toxicity of the final effluent from Monitoring Point 049F to <3.0 TU<sub>A</sub> within three (3) years of notification. The following documents are available as guidance to reduce toxicity to acceptable levels: Phase I, EPA/600/6-91/003; Phase II, EPA/600/R-92/080; Phase III, EPA/600/R-92/081; and Publicly Owned Treatment Works, EPA/833B-99/002. The tests shall be conducted and reported as specified above. Upon approval from the Department, the acute toxicity tests may be performed using the more sensitive species identified in the acute toxicity database. If a more sensitive species cannot be identified, the acute toxicity tests shall be performed with both species. Annual progress reports shall be submitted to the Department within 30 days of the completion of the last test of each annual cycle.
- 2) This permit may be modified in accordance with applicable laws and rules to include additional whole effluent toxicity control requirements as necessary.

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## 2. Effluent Limitations, Monitoring Point 049A

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittees are approved to discharge treated municipal wastewater and treated storm water runoff from Monitoring Point 049A through Outfall 049 (DRO). Outfall 049 (DRO) discharges to the Detroit River. Such discharge shall be limited and monitored by the GLWA as specified below.

Monitoring Point 049A is a primary treated effluent conduit. There shall be no discharge from Monitoring Point 049A directly to the Detroit River through Outfall 049 (DRO) unless the discharge from Monitoring Point 049B exceeds a peak hourly flow of 930 MGD (which includes recycle) or in accordance with an approved GLWA Wet Weather Operational Plan (see Part I.A.11.). Discharges from Monitoring Point 049A shall be limited and monitored by the permittees as specified below.

<u>Parameter</u>	Maximum L Quantity or Monthly		<u>Units</u>	Maximu <u>Quality o</u> <u>Mon</u>	r Conce		on Units	Monitoring Frequency	Sample <u>Type</u>
Flow	(report)	(report)	MGD		-			Daily	Report Total Daily Flow
Carbonaceous Biochemical	Oxvaen Den	nand (CB0	DD <sub>5</sub> )						
				40	) (re	eport)	mg/l	Daily	24-Hr Composite
Total Suspended Solids				70	) (re	eport)	mg/l	Daily	24-Hr Composite
Total Phosphorus (as P)				1.	5 (re	eport)	mg/l	Daily	24-Hr Composite
Ammonia Nitrogen (as N)				(rep	ort) (re	eport)	mg/l	Daily	24-Hr Composite
Total Mercury  - Corrected  - Uncorrected  - Field Duplicate  - Field Corrected  - Laboratory Method Blank	nth	(report)		(rep    12-Month	- (re - (re - (re	eport) eport) eport) eport) eport)	ng/l ng/l ng/l ng/l ng/l	2x Monthly 2x Monthly 2x Monthly 2x Monthly 2x Monthly	y Grab y Grab y Grab
Rolling Av	<u>rerage</u>		KOI	ling Average					
Total Mercury 0.19			lbs/day	25	-		ng/l	Monthly	Calculation

#### a. Sampling Locations

The sampling locations for the pollutants in Part 1.A.2. of this permit shall be representative of the effluent and consistent with the locations approved by the Department. Samples for CBOD5, Total Suspended Solids, Ammonia Nitrogen, Total Mercury, and Total Phosphorus shall be taken prior to mixing with other waste streams. The Department may approve alternate sampling locations that are demonstrated by the permittees to be representative of the effluent

- b. Sampling of Short-Term Wet Weather Events

  If the first calendar day of the discharge event through Monitoring Point 049A includes less than three hours of flow but continues into the next calendar day, the sampling can be included as a part of the subsequent event the following day.
- c. Final Effluent Limitation for Total Mercury
  The final limit for total mercury is the Discharge Specific Level Currently Achievable (LCA) based on a
  multiple discharger variance from the WQBEL of 1.3 ng/l, pursuant to Rule 1103(9) of the Water Quality
  Standards. Compliance with the LCA shall be determined as a 12-month rolling average, the
  calculation of which may be done using blank-corrected sample results. The 12-month rolling average
  shall be determined by adding the present monthly average result to the preceding 11 monthly average
  results then dividing the sum by 12. For facilities with quarterly monitoring requirements for total
  mercury, quarterly monitoring shall be equivalent to three (3) months of monitoring in calculating the

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12-month rolling average. Facilities that monitor more frequently than monthly for total mercury must determine the monthly average result, which is the sum of the results of all data obtained in a given month divided by the total number of samples taken, in order to calculate the 12-month rolling average. If the 12-month rolling average for any month is less than or equal to the LCA, the GLWA will be considered to be in compliance for total mercury for that month, provided the GLWA is also in full compliance with the Pollutant Minimization Program for Total Mercury, set forth in Part I.A.10. of this permit.

The permittee may choose to demonstrate that an alternate site-specific LCA is appropriate and request a permit modification. Such request and supporting documentation shall be submitted in writing to the Department. Supporting documentation shall include a minimum of 12 samples taken over 12-month period in accordance with EPA Method 1631. Upon approval, this permit may be modified in accordance with applicable laws and rules to incorporate the alternate site-specific LCA as the effluent limitation for Total Mercury.

After a minimum of 12 monthly data points have been collected, the permittees may request a reduction in the monitoring frequency for total mercury. This request shall contain an explanation as to why the reduced monitoring is appropriate and shall be submitted to the Department. Upon receipt of written approval and consistent with such approval, the permittees may reduce the monitoring frequency for total mercury indicated in Part I.A.2. of this permit. The Department may revoke the approval for reduced monitoring at any time upon notification to the permittees.

d. Total Mercury Testing and Additional Reporting Requirements
The analytical protocol for total mercury shall be in accordance with EPA Method 1631, Revision E,
"Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry."
The quantification level for total mercury shall be 0.5 ng/l, unless a higher level is appropriate because of sample matrix interference. Justification for higher quantification levels shall be submitted to the Department within 30 days of such determination.

The use of clean technique sampling procedures is required unless the permittees can demonstrate to the Department that an alternate sampling procedure is representative of the discharge. Guidance for clean technique sampling is contained in EPA Method 1669, Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels (Sampling Guidance), EPA-821-R96-001, July 1996. Information and data documenting the permittee's sampling and analytical protocols and data acceptability shall be submitted to the Department upon request.

In order to demonstrate compliance with EPA Method 1631E and EPA Method 1669, the permittees shall report, on the daily sheet, the analytical results of all field blanks and field duplicates collected in conjunction with each sampling event, as well as laboratory method blanks when used for blank correction. The permittees shall collect at least one (1) field blank and at least one (1) field duplicate per sampling event. If more than ten (10) samples are collected during a sampling event, the permittees shall collect at least one (1) additional field blank AND field duplicate for every ten (10) samples collected. Only field blanks or laboratory method blanks may be used to calculate a concentration lower than the actual sample analytical results (i.e., a blank correction). Only one (1) blank (field OR laboratory method) may be used for blank correction of a given sample result, and only if the blank meets the quality control acceptance criteria. If blank correction is not performed on a given sample analytical result, the permittees shall report under "Total Mercury – Corrected" the same value reported under "Total Mercury – Uncorrected." The field duplicate is for quality control purposes only; its analytical result shall not be averaged with the sample result.

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# 3. Effluent Limitations, Monitoring Point 049B

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittees are authorized to discharge treated municipal wastewater from Monitoring Point 049B through Outfall 049 (DRO), or through Outfall 050 (RRO) when there is reduced hydraulic capacity through DRO or during wet weather, once the RRO Disinfection Project is completed. Outfall 049 (DRO) discharges to the Detroit River. Outfall 050 (RRO) discharges to the Rouge River. In addition, the permittees are authorized to discharge treated municipal wastewater from Monitoring Point 049B through Outfall 050 to the Rouge River as provided in Part I.A.4.

Outfall 049B is the combined secondary treated effluent conduit for all dry weather flows and all wet weather flows up to and including a peak hourly flow of 930 MGD (which includes recycle).

Discharges from Monitoring Point 049B shall be limited and monitored by the permittees as specified below.

		laximum L Quantity or					Limits for oncentratio	n	Monitoring	Sample
<u>Parameter</u>	Monthly		Daily	<u>Units</u>	Monthly		Daily	<u>Units</u>	Frequency	<u>Type</u>
Flow (This flow measure	(report) ement is a	 II secondai	(report) ry flow mir	MGD nus recyc	 le and buffe	 er flows)			Daily	Report Total Daily Flow
Recycled Flow (Screened Final E	(report) ffluent)		(report)	MGD					Daily	Report Total Daily SFE Flow
Buffer Flow	(report)		(report)	MGD					Daily	Report Total Daily Flow
Carbonaceous Bioc		xygen Den 310,000	nand (CB0 	DD₅) lbs/day	25	40	(report)	mg/l	Daily	24-Hr Composite
Total Suspended So	olids 233,000	349,000		lbs/day	30	45		mg/l	Daily	24-Hr Composite
Ammonia Nitrogen (	as N)				(report)		(report)	mg/l	Daily	24-Hr Composite
Total Mercury  - Corrected  - Uncorrected  - Field Duplicate  - Field Corrected  - Laboratory Method	(report)    d Blank 	  	(report)	lbs/day   	(report)   	  	(report) (report) (report) (report)	ng/l ng/l ng/l ng/l	Quarterly Quarterly Quarterly Quarterly Quarterly	Grab Grab Grab Grab Grab
<u>Ro</u>	12 Month lling Aver			<u>Ro</u>	12 Month Iling Avera	<u>ge</u>	( -   -   -	3	,	
Total Mercury	0.023			lbs/day	3.0			ng/l	Monthly	Calculation
					Minimum <u>Daily</u>		Maximum <u>Daily</u>			
рН					6.0		9.0	S.U.	Daily	Grab
Total Phosphorus (a	as P) 5400			lbs/day	0.7		(report)	mg/l	Daily	24-Hr Composite
	Six Month ge (April -				Six Month	<u>- Sept.)</u>				
Total Phosphorus	4600			lbs/day	0.6			mg/l	(see I.A.3	.c) Calculation

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Minimum	
<u>Monthly</u>	

CBOD₅ Minimum % Removal			 85	 	%	Monthly	Calculation
Total Suspended Solids Minimum	n % Remo	val	 85	 	%	Monthly	Calculation

## a. Sampling Locations

Samples for CBOD<sub>5</sub>, Total Suspended Solids, Ammonia Nitrogen, Total Phosphorus, Total Mercury and pH shall be taken prior to mixing with other waste streams. Samples for pH shall be collected only during periods of discharge from Monitoring Point 049A through Outfall 049 (DRO).

#### b. Percent Removal Requirements

These requirements shall be calculated based on the monthly (30-day) effluent CBOD5 and TSS concentrations and the monthly influent concentrations for approximately the same period.

c. Total Phosphorus Six Month Average Limit (April - September)

The six month average shall be determined by adding the six monthly average results from April through September and dividing the sum by six. For the purpose of reporting on the Discharge Monitoring Reports, the permittees shall calculate and report the six month average on the October Discharge

Monitoring Report.

#### d. Final Effluent Limitation for Total Mercury

The final limit for total mercury is the Discharge Specific Level Currently Achievable (LCA) based on a multiple discharger variance from the WQBEL of 1.3 ng/l, pursuant to Rule 1103(9) of the Water Quality Standards. Compliance with the LCA shall be determined as a 12-month rolling average, the calculation of which may be done using blank-corrected sample results. The 12-month rolling average shall be determined by adding the present monthly average result to the preceding 11 monthly average results then dividing the sum by 12. For facilities with quarterly monitoring requirements for total mercury, quarterly monitoring shall be equivalent to three (3) months of monitoring in calculating the 12-month rolling average. Facilities that monitor more frequently than monthly for total mercury must determine the monthly average result, which is the sum of the results of all data obtained in a given month divided by the total number of samples taken, in order to calculate the 12-month rolling average. If the 12-month rolling average for any month is less than or equal to the LCA, the permittees will be considered to be in compliance for total mercury for that month, provided the permittees are also in full compliance with the Pollutant Minimization Program for Total Mercury, set forth in Part I.A.10. of this permit.

The permittee may choose to demonstrate that an alternate site-specific LCA is appropriate and request a permit modification. Such request and supporting documentation shall be submitted in writing to the Department. Supporting documentation shall include a minimum of 12 samples taken over 12-month period in accordance with EPA Method 1631. Upon approval, this permit may be modified in accordance with applicable laws and rules to incorporate the alternate site-specific LCA as the effluent limitation for Total Mercury.

After a minimum of 12 monthly data points have been collected, the permittees may request a reduction in the monitoring frequency for total mercury. This request shall contain an explanation as to why the reduced monitoring is appropriate and shall be submitted to the Department. Upon receipt of written approval and consistent with such approval, the permittees may reduce the monitoring frequency for total mercury indicated in Part I.A.3. of this permit. The Department may revoke the approval for reduced monitoring at any time upon notification to the permittees.

e. Total Mercury Testing and Additional Reporting Requirements
The analytical protocol for total mercury shall be in accordance with EPA Method 1631, Revision E,
"Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry."
The quantification level for total mercury shall be 0.5 ng/l, unless a higher level is appropriate because of sample matrix interference. Justification for higher quantification levels shall be submitted to the Department within 30 days of such determination.

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The use of clean technique sampling procedures is required unless the permittees can demonstrate to the Department that an alternate sampling procedure is representative of the discharge. Guidance for clean technique sampling is contained in EPA Method 1669, Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels (Sampling Guidance), EPA-821-R96-001, July 1996. Information and data documenting the permittee's sampling and analytical protocols and data acceptability shall be submitted to the Department upon request.

In order to demonstrate compliance with EPA Method 1631E and EPA Method 1669, the permittees shall report, on the daily sheet, the analytical results of all field blanks and field duplicates collected in conjunction with each sampling event, as well as laboratory method blanks when used for blank correction. The permittees shall collect at least one (1) field blank and at least one (1) field duplicate per sampling event. If more than ten (10) samples are collected during a sampling event, the permittees shall collect at least one (1) additional field blank AND field duplicate for every ten (10) samples collected. Only field blanks or laboratory method blanks may be used to calculate a concentration lower than the actual sample analytical results (i.e., a blank correction). Only one (1) blank (field OR laboratory method) may be used for blank correction of a given sample result, and only if the blank meets the quality control acceptance criteria. If blank correction is not performed on a given sample analytical result, the permittees shall report under "Total Mercury – Corrected" the same value reported under "Total Mercury – Uncorrected." The field duplicate is for quality control purposes only; its analytical result shall not be averaged with the sample result.

## 4. Interim Effluent Limitations, Monitoring Point 050A

During the period beginning on the effective date of this permit and lasting until initiation of operation of the RRO Disinfection Project, the permittees are approved to discharge treated municipal wastewater and treated storm water runoff from Monitoring Point 050A through Outfall 050 (RRO). Normally, the discharge may consist of only primary treated effluent when the discharge is necessary due to hydraulic constraints resulting from wet weather events. There shall be no discharge from Monitoring Point 050A unless the discharge from Monitoring Point 049B exceeds a peak hourly flow of 930 MGD (which includes recycle) or in accordance with an approved GLWA WRRF Wet Weather Operational Plan (see Part I.A.11.). Discharge from Outfall 050 (RRO) is not allowed unless hydraulically or structurally necessary. Outfall 050 (RRO) discharges to the Rouge River.

Other options for discharge from Outfall 050 include, 1) when Outfall 049 (DRO) is out-of-service, the discharge may consist of secondary or secondary and primary treated wastewater, 2) when Outfall 049 (DRO) has reduced hydraulic capacity the discharge may consist of secondary or secondary and primary treated wastewater, and 3) when there is department approved limited secondary capacity when Outfall 049 cannot be used due to construction, the discharge may consist of secondary or secondary and primary treated wastewater. Discharges from Monitoring Point 050A shall be limited and monitored by the permittees as specified below.

Maximum Limits for Maximum Limits for

Quantity or Loading Quality or Concentration Monitoring Sample

Parameter Monthly 7-Day Daily Units Monthly 7-Day Daily Units Frequency Type

Limitations and monitoring requirements in effect when Outfall 049 is out-of-service and prior to initiation of operation of the RRO <u>Disinfection Project:</u>

All limitations and monitoring specified in Part I.A.1. apply except for the Available Cyanide monitoring requirement, Total Residual Chlorine requirement, and the Fecal Coliform Bacteria limitations, which are replaced with the limitations and monitoring requirements specified below with the Total Residual Chlorine monitoring and limitation removed:

Available Cyanide --- --- 89 µg/l Daily Grab
Fecal Coliform Bacteria --- --- (report) (report) --- cts/100 ml Daily Grab

a. Sampling of Short-Term Wet Weather Events If the first calendar day of the discharge event through Monitoring Point 050A includes less than three hours of flow but continues into the next calendar day, the sampling can be included as a part of the subsequent event the following day. PERMIT NO. MI0022802 Page 11 of 71

# 4. Interim Effluent Limitations, Monitoring Point 050A (continued)

		aximum Li uantity or					imits for incentratio	n	Monitoring	ı Sample
<u>Parameter</u>		7-Day	Daily	<u>Units</u>	Monthly		Daily		Frequency	•
Limitations and moni					er periods o	of dischar	ge from Mo	nitoring	Point 050A	and prior to
Initiation of operation	of the RR	O Disinted	tion Proje	<u>ect:</u>						
Flow	(report)		(report)	MGD					Daily	Report Total Daily Flow
Carbonaceous Bioch	emical Ox	ygen Dem	and (CBC	)D <sub>5</sub> )						
					40		(report)	mg/l	Daily	24-Hr Composite
Total Suspended So	lids									
					70		(report)	mg/l	Daily	24-Hr Composite
Total Phosphorus (as	s P)									
. ,					1.5		(report)	mg/l	Daily	24-Hr Composite
Available Cyanide							89	μg/l	Daily	Grab
Fecal Coliform Bacte	eria				(report)		(report) ct	s/100 ml	Daily	Grab
Ammonia Nitrogen (a	as N)				(report)		(report)	mg/l	Daily	24-Hr Composite
Total Copper							(report)	μg/l	Daily	24-Hr Composite
Total Polychlorinated	l Biphenyls	(PCBs)								
Aroclor 1016							(report)	μg/l	Weekly	24-Hr Composite
Aroclor 1221							(report)	μg/l	Weekly	24-Hr Composite
Aroclor 1232							(report)	μg/l	Weekly	24-Hr Composite
Aroclor 1242							(report)	μg/l	Weekly	24-Hr Composite
Aroclor 1248							(report)	μg/l	Weekly	24-Hr Composite
Aroclor 1254							(report)	μg/l	Weekly	24-Hr Composite
Aroclor 1260							(report)	μg/l	Weekly	24-Hr Composite
				M	aximum PO	В				
					Aroclor					• • • •
See I.A.4.e.					(report)			μg/l	Monthly	See I.A.4.e.
					Minimum <u>Daily</u>		Maximum <u>Daily</u>			
рН					6.0		9.0	S.U.	Daily	Grab
Dissolved Oxygen					(report)			mg/l	Daily	Grab

#### Narrative Standard

The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, or deposits as a result of this discharge in unnatural quantities which are or may become injurious to any designated use.

## b. Sampling Locations

The sampling locations for the pollutants in Part 1.A.4. of this permit shall be representative of the effluent and consistent with the locations approved by the Department. The Department may approve alternate sampling locations that are demonstrated by the GLWA to be representative of the effluent.

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c. Sampling of Short-Term Wet Weather Events If the first calendar day of the discharge event through Monitoring Point 050A includes less than three hours of flow but continues into the next calendar day, the sampling can be included as a part of the subsequent event the following day.

- d. Analytical Methods and Quantification Levels for Available Cyanide and Total Copper The sampling procedures, preservation and handling, and analytical protocol for compliance monitoring for Available Cyanide shall be in accordance with EPA Method OIA-1677. The quantification levels for Available Cyanide and Total Copper shall be 2.0 µg/l and 1.0 µg/l respectively unless a higher level is appropriate because of sample matrix interference. Justification for higher quantification levels shall be submitted to the Department within 30 days of such determination. Upon approval of the Department, the permittees may use alternate analytical methods (for parameters with methods specified in 40 CFR 136, the alternate methods are restricted to those listed in 40 CFR 136).
- e. Limits Below the Quantification Level Total Polychlorinated Biphenyls (PCBs) The sampling procedures, preservation and handling, and analytical protocol for compliance monitoring for Total PCBs shall be in accordance with EPA Method 608.3. Upon approval from the Department, the permittees may use alternate analytical methods (for parameters with methods specified in 40 CFR, Part 136, the alternate methods are restricted to those listed in 40 CFR, Part 136). The quantification level shall be 0.1 ug/l unless a higher level is appropriate because of sample matrix interference. Justification for a higher quantification level shall be submitted to the Department within 30 days of such determination.

For the purpose of reporting on the Daily tab of the DMR, individual aroclor results less than the quantification level shall be reported as "<0.1." This permit condition does not authorize the discharge of PCBs at levels that are injurious to the designated uses of the waters of the state or that constitute a threat to the public health or welfare.

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# 5. Final Effluent Limitations, Monitoring Point 050A

Upon initiation of operation of the RRO Disinfection Project, the permittees are approved to discharge secondary treated municipal wastewater and primary treated municipal wastewater when hydraulically necessary from Monitoring Point 050A through Outfall 050 (RRO). Outfall 050 (RRO) discharges to the Rouge River. Discharge from Outfall 050 (RRO) is approved when the hydraulic capacity of Outfall 049 (DRO) is not sufficient to meet the approved GLWA wet weather operational plan (see Part I.A.11.). Such discharge shall be limited and monitored by the permittees as specified below.

		aximum L					_imits for			
			<u>r Loading</u>				oncentratio		Monitoring	•
<u>Parameter</u>	<u>Monthly</u>	<u>7-Day</u>	<u>Daily</u>	<u>Units</u>	<u>Monthly</u>	<u>7-Day</u>	<u>Daily</u>	<u>Units</u>	<u>Frequency</u>	<u>Type</u>
Flow	(report)		(report)	MGD					Daily	Report Total Daily Flow
Available Cyanide							44	μg/l	Daily	Grab
Total Copper							(report)	μg/l	Monthly	24-Hr Composite
Fecal Coliform Bact	eria				200	400	C	ts/100 m	l Daily	Grab
Total Residual Chlo	rine						38	μg/l	Daily	Grab
Oil & Grease						15		mg/l	Daily	Grab
Total Polychlorinate	d Biphenyl	s (PCBs)								
Aroclor 1016		` <i>'</i>					(report)	μg/l	Weekly	24-Hr Composite
Aroclor 1221							(report)	μg/l	Weekly	24-Hr Composite
Aroclor 1232							(report)	μg/l	Weekly	24-Hr Composite
Aroclor 1242							(report)	μg/l	Weekly	24-Hr Composite
Aroclor 1248							(report)	μg/l	Weekly	24-Hr Composite
Aroclor 1254							(report)	μg/l	Weekly	24-Hr Composite
Aroclor 1260							(report)	μg/l	Weekly	24-Hr Composite
				M	laximum PC <u>Aroclor</u>	В				
See I.A,5.f.					<0.1			μg/l	Monthly	See I.A.5.f.
					Minimum <u>Daily</u>		Maximum <u>Daily</u>			
рН					6.0		9.0	S.U.	Daily	
Dissolved Oxygen					3.0			mg/l	Daily	Grab

#### a. Narrative Standard

The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, or deposits as a result of this discharge in unnatural quantities which are or may become injurious to any designated use.

### b. Sampling Locations

The sampling locations for the pollutants in Part I.A.5. of this permit shall be representative of the effluent and consistent with the locations approved by the Department. The Department may approve alternate sampling locations that are demonstrated by the permittees to be representative of the effluent.

Sampling of Short-Term Wet Weather Events
 If the first calendar day of the discharge event includes less than three hours of flow but continues into the next calendar day, the sampling can be included as part of the subsequent event the following day.

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- d. Total Residual Chlorine (TRC)
  - Compliance with the TRC limit shall be determined on the basis of one or more grab samples. If more than one (1) sample per day is taken, the additional samples shall be collected in near equal intervals over approximately eight (8) hours. The samples shall be analyzed immediately upon collection and the average reported as the daily concentration. Samples shall be analyzed in accordance with Part II.B.2. of this permit.
- e. Analytical Methods and Quantification Levels for Available Cyanide and Total Copper The sampling procedures, preservation and handling, and analytical protocol for compliance monitoring for Available Cyanide shall be in accordance with EPA Method OIA-1677. The quantification levels for Available Cyanide and Total Copper shall be 2.0 µg/l and 1.0 µg/l, respectively, unless a higher level is appropriate because of sample matrix interference. Justification for higher quantification levels shall be submitted to the Department within 30 days of such determination. Upon approval of the Department, the permittees may use alternate analytical methods (for parameters with methods specified in 40 CFR 136, the alternate methods are restricted to those listed in 40 CFR 136).
- f. Limits Below the Quantification Level Total Polychlorinated Biphenyls (PCBs)
  The sampling procedures, preservation and handling, and analytical protocol for compliance monitoring
  for Total PCBs shall be in accordance with EPA Method 608.3. Upon approval from the Department,
  the permittees may use alternate analytical methods (for parameters with methods specified in 40 CFR,
  Part 136, the alternate methods are restricted to those listed in 40 CFR, Part 136). The quantification
  level shall be 0.1 ug/l unless a higher level is appropriate because of sample matrix interference.
  Justification for a higher quantification level shall be submitted to the Department within 30 days of such
  determination.

The water quality-based effluent limitation for Total PCBs is  $2.6 \times 10^{-5} \, \mu g/l$  ( $2.0 \times 10^{-4} \, lbs/day$ ) maximum monthly average. This is less than the quantification level. Control requirements are therefore established consistent with R 323.1213. **The discharge of any individual aroclor at or above the quantification level of 0.1 ug/l is a specific violation of this permit.** If concentrations of all aroclors representing a monitoring period are less than their quantification levels, the permittees will be considered to be in compliance with the permit for the monitoring period that the analyses represent, provided that the permittees are also in full compliance with the Pollutant Minimization Program for Total PCBs set forth in Part I.A.10 of this permit. For the purpose of reporting on the Daily tab of the DMR, individual aroclor results less than the quantification level shall be reported as "<0.1." For the purpose of reporting on the Summary tab of the DMR, the value reported under "Maximum PCB Aroclor" shall be the highest aroclor concentration observed during the monitoring period. This permit condition does not authorize the discharge of PCBs at levels that are injurious to the designated uses of the waters of the state or that constitute a threat to the public health or welfare.

## g. Schedule of Implementation

The permittees shall implement the following for Outfall 050 (RRO) Disinfection Program:

- 1) On or before <u>February 1, 2010 (submitted)</u>, the permittees shall submit for review and approval a basis of design report for the previously proposed Outfall 084 (RRO2).
- 2) On or before March 1, 2011 (submitted), the permittees shall submit for review and approval complete plans and specifications for Segment 1 of the previously proposed Outfall 084 (RRO2) project. Segment 1 consists of improvements undertaken at the WRRF consistent with the approved Basis of Design report.
- 3) On or before <u>July 1, 2012 (submitted)</u>, the permittees shall commence construction of Segment 1, consistent with the approved plans and specifications.
- 4) On or before <u>July 1, 2013 (submitted)</u>, the permittees shall submit a construction progress report for Segment 1 of the previously proposed Outfall 084 (RRO2).
- 5) On or before March 1, 2015, (completed) the permittees shall complete construction of Segment 1 of the previously proposed Outfall 084 (RRO2) project.

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6) On or before <u>June 1, 2016</u>, (submitted) the permittees shall submit for review and approval a complete basis of design report, and complete plans and specifications, for the Outfall 050 (RRO) Disinfection Project (if design, bid, build). Alternatively, if DWSD chooses to pursue design-build for the Outfall 050 (RRO) Disinfection Project, DWSD shall submit on or before <u>June 1, 2016</u>, (submitted) a detailed engineering report for the overall project, a permitting plan (that includes a description of the construction segments), a timetable for Part 41 permit application submittal, and sufficient project schematics for the overall project.

- 7) On or before <u>November 1, 2016</u>, (completed) the permittees shall submit complete plans and specifications for at a minimum the first segment to be construction under a design-build contract.
- 8) On or before <u>April 1, 2017</u>, (commenced) the permittees shall commence construction of the RRO Disinfection Project, consistent with the approved plans and specifications.
- 9) On or before April 1, 2018, (submitted) the permittees shall submit a construction progress report for RRO Disinfection Project.
- 10) On or before April 1, 2019, (completed) the permittees shall complete construction of RRO Disinfection Project and place into full operation the facilities to achieve final effluent limits specified in Part I.A.5.

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# 6. Combined Sewer Overflow Retention Treatment Basin Discharge Authorization, Monitoring Points 101A, 102A, 103A, 104A, 108A and 109A

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittees are authorized to discharge treated combined sewage from the Hubbell/Southfield Combined Sewer Overflow (CSO) Retention Treatment Basin (RTB), Monitoring Point 101A, through Outfall 101; from the Puritan/Fenkell CSO RTB, Monitoring Point 102A, through Outfall 102; from the Seven Mile CSO RTB, Monitoring Point 103A, through Outfall 103; from the Belle Isle RTB, Monitoring Point 108A, through Outfall 108; from the Oakwood RTB, Monitoring Point 109A, through Outfall 109; and from the Conner Creek CSO RTB Monitoring Point 104A, through Outfall 104 when the basins are full and wastewater flows exceed downstream interceptor capacity. Outfall 101, Outfall 102, Outfall 103, and Outfall 109 discharge to the Rouge River. Outfall 108 discharges to the Detroit River. Outfall 104 discharges to Conner Creek. Such discharges shall be limited and monitored by the permittees as specified below:

Influent Characteristics	<u>Q</u> ı	aximum L uantity or _7-Day		<u>Units</u>	<u>Qual</u>	imits for oncentration Event	on <u>Units</u>	Monitoring <u>Frequency</u>	
Flow	(report)		(report)	MGD		 		Daily	Report Total Daily Flow
Effluent Characteristics									
Flow	(report)		(report)	MGD		 		Daily	Report Total Daily Flow
Carbonaceous Bioc	hemical Ox 	ygen Dem 	nand (CBC 	DD <sub>5</sub> ) 	(report)	 (report)	mg/l	Event	Composite
Total Suspended So	olids 				(report)	 (report)	mg/l	Event	Composite
Ammonia Nitrogen (	(as N) 				(report)	 (report)	mg/l	Event	Composite
Total Phosphorus (a	as P) 				(report)	 (report)	mg/l	Event	Composite
Fecal Coliform Bact May 1 – October 3 November 1 – Apri	1					 	ts/100 ml ts/100 ml	See I.A.6.a. See I.A.6.a.	
Total Residual Chlo	rine				Event <u>Average</u>	Event <u>Maximum</u>	l.		
Any Event (See additional cont		 ed in Part	 I.A.8.)		(report)	 (report)	mg/l	See I.A.6.a.	Grab

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	Ma	aximum Li	imits for				imits for			
Effluent	<u>Qı</u>	<u>uantity or</u>	<u>Loading</u>		<u>Qua</u>	lity or Co	<u>oncentratio</u>	<u>n</u>	Monitoring	Sample
<u>Characteristics</u>	<u>Monthly</u>	<u>7-Day</u>	<u>Daily</u>	<u>Units</u>	<u>Monthly</u>	<u>7-Day</u>	<u>Event</u>	<u>Units</u>	<u>Frequency</u>	<u>Type</u>
Oil & Grease (Monit	oring Point 	109A only 			(report)		(report)	mg/l	Daily During Discharg	Grab je
					Event <u>Minimum</u>		Event <u>Maximum</u>			
рН					(report)		(report)	S.U.	Daily During Discharg	Grab je
Dissolved Oxygen					(report)			mg/l	Daily During Discharg	Grab je

#### a. Retention Basin Monitoring and Reporting

The permittee shall conduct retention basin monitoring and report consistent with the requirements of Part II.C.2. of this permit. The permittee shall supply the results of each sample analyzed during each discharge period.

An <u>Event</u> starts when combined sewage is discharged into a facility, and ends when effluent flow (if any) ceases and does not resume within 24 hours.

**Influent flow** shall be reported for all wet weather events where combined sewage is discharged into the facility. Influent flow reporting shall also indicate the component of the total influent flow that is dewatered to the interceptor from the facility during an event and shall be reported in the comment section of the monthly Discharge Monitoring Reports (DMR). Alternate procedures may be approved by the Department.

**Effluent flow** shall be reported for all events that cause discharge from the facility to the receiving waters.

Effluent sampling for  $CBOD_5$ , TSS, Ammonia Nitrogen (as N), and Total Phosphorus (as P) shall be by effluent flow-weighted composite sampling over the entire event. Alternate procedures for determining an event composite may be approved by the Department if existing equipment cannot reliably determine a flow-weighted composite. For purposes of reporting for a discharge event that occurs on multiple calendar days, the composite pollutant concentrations for the event shall be reported on the day the discharge event ended. Individual events shall be determined by a lack of effluent discharge for 24 hours.

For **effluent pH**, report the maximum value of any individual sample taken during the month in the "Maximum" column under "Quality or Concentration" on the monthly DMRs and the minimum value of any individual sample taken during the month in the "Minimum" column under "Quality or Concentration" on the monthly DMRs. The individual values taken during the month shall be reported on the daily DMRs.

For **effluent dissolved oxygen**, report the lowest concentration of any individual sample in the "Minimum" column under the "Quantity or Concentration" on the monthly DMRs. The individual values taken during the month shall be reported on the daily DMRs.

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For effluent Fecal Coliform Bacteria and Total Residual Chlorine, grab samples shall be collected every two (2) hours for the first six (6) hours of the discharge and every four (4) hours thereafter for the duration of the discharge; the first sample shall be collected as soon as practical after the discharge begins. For fecal coliform, the "event maximum" shall be reported on the daily DMRs as the geometric mean of all samples taken during an event, provided that three (3) or more samples are collected. For TRC, report the average of all samples in an event as the "Event Average" and the maximum individual sample in an event as the "Event Maximum" on the daily DMRs. The goal of the effluent sampling program is to collect at least three samples during each discharge event, and samples shall be collected at shorter intervals at the onset of the event, if the permittee estimates that the event duration may be less than six hours. For purposes of reporting for a discharge event that occurs on multiple calendar days, the pollutant concentrations for the event shall be reported on the day the discharge event ended. The highest event averages for Fecal Coliform and TRC shall also be reported in the "Maximum" columns under "Quality and Concentration" on the monthly DMRs.

#### b. Retention Treatment Basin Dewatering

The retention treatment basin shall be promptly dewatered as in accordance with the Department Approved Consolidated Annual Report following the need to divert flow to the basin and shall be maintained in readiness for use. The discharge of sludge or residual accumulations from the basin to the surface waters is prohibited. These sludges shall be promptly removed and disposed in accordance with procedures approved by the Department.

For this permit while the Regional Operational Plan is being revised, if up to 930 MGD (including recycle) is being processed with secondary treatment at the WRRF and no primary flow is being discharged, then tributary combined or sanitary storage basins in the GLWA system may be dewatered. Such dewatering will not be considered a violation of this permit, even if contrary to the Wet Weather Event definition (see Part II.A.). Once a revised Regional Operation Plan is developed, it shall be implemented once reviewed and approved by the Department.

#### c. Narrative Standard

The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, or deposits as a result of this discharge in unnatural quantities which are or may become injurious to any designated use.

#### d. Operation and Maintenance Plan

The permittee shall assure that discharges only occur in response to rainfall (or snowmelt) events and cease soon thereafter. Any rehabilitation and maintenance needs shall be addressed to ensure adequate sewer capacity and functionality. This may be accomplished through continued implementation of the approved Operation and Maintenance Plan.

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# 7. Combined Sewer Overflow Screening and Disinfection Facilities Discharge Authorization, Monitoring Points 105A, 106A and 107A

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittees are authorized to discharge treated combined sewage from the Leib Combined Sewer Overflow (CSO) Screening and Disinfection Facility Monitoring Point 105A through Outfall 105, from the St. Aubin CSO Screening and Disinfection Facility Monitoring Point 106A through Outfall 106, and from the Baby Creek CSO Screening and Disinfection Facility Monitoring Point 107A through Outfall 107 when the wastewater flows exceed downstream interceptor capacities. Outfall 105 and Outfall 106 discharge to the Detroit River. Outfall 107 discharges to the Rouge River. Such discharges shall be limited and monitored by the permittees as specified below:

Effluent		-	imits for Loading		-	-	Limits for oncentratior	1	Monitoring	Sample
<u>Characteristics</u>	<u>Monthly</u>		<u>Daily</u>	<u>Units</u>	Monthly			_	Frequency	Type_
Flow	(report)		(report)	MGD					Daily	Report Total Daily Flow
Carbonaceous Bioc	hemical Oxy	gen Dem	and (CBC 	D5) 	(report)		(report)	mg/l	Quarterly	Grab
Total Suspended Se	olids				(report)		(report)	mg/l	Quarterly	Grab
Ammonia Nitrogen	(as N) 				(report)		(report)	mg/l	Quarterly	Grab
Total Phosphorus (a	as P)				(report)		(report)	mg/l	Quarterly	Grab
Oil & Grease (Baby	Creek CSO	Screenin	g & Disinf 	ection Fa	acility, only) (report)		(report)  Event  Maximum	mg/l D	Daily uring Discharg	Grab ge
Fecal Coliform Bact May 1 – October 3 November 1 – Apr	31						400 cts	s/100 m s/100 m		
Total Residual Chlo Any Event (see additional cont		 d in Part	 1 Δ 8 )		Event Average (report)		Event Maximum (report)	mg/l	See I.A.7.a.	Grab
pH					Event Minimum (report)		Event Maximum (report)	S.U. D	Daily uring Discharç	Grab ge
Dissolved Oxygen					(report)			mg/l D	Daily uring Discharg	Grab je

a. Screening and Disinfection Facilities Monitoring and Reporting
The permittees shall monitor screening and disinfection facilities performance and report the monitoring consistent with the requirements of Part II.C.2. of this permit. The permittees shall supply the results of each sample taken during each discharge period.

**Effluent flow** shall be reported for all events that cause discharge from the facility to the receiving waters.

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For **effluent pH**, report the maximum value of any individual sample taken during the month in the "Maximum" column under "Quality or Concentration" on the monthly DMRs and the minimum value of any individual sample taken during the month in the "Minimum" column under "Quality or Concentration" on the monthly DMRs. The individual values taken during the month shall be reported on the daily DMRs.

For **effluent dissolved oxygen**, report the lowest concentration of any individual sample in the "Minimum" column under the "Quantity or Concentration" on the monthly DMRs. The individual values taken during the month shall be reported on the daily DMRs.

For effluent Fecal Coliform Bacteria and Total Residual Chlorine, grab samples shall be collected every two (2) hours for the first six (6) hours of the discharge and every four (4) hours thereafter for the duration of the discharge; the first sample shall be collected as soon as practical after the discharge begins. For fecal coliform, the "event maximum" shall be reported on the daily DMRs as the geometric mean of all samples taken during an event, provided that three (3) or more samples are collected. For TRC, report the average of all samples in an event as the "Event Average" and the maximum individual sample in an event as the "Event Maximum" on the daily DMRs. The goal of the effluent sampling program is to collect at least three samples during each discharge event, and samples shall be collected at shorter intervals at the onset of the event, if the permittees estimate that the event duration may be less than six hours. For purposes of reporting for a discharge event that occurs on multiple calendar days, the pollutant concentrations for the event shall be reported on the day the discharge event ended. The highest event averages for Fecal Coliform and TRC shall also be reported in the "Maximum" columns under "Quality and Concentration" on the monthly DMRs.

#### b. Narrative Standard

The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, or deposits as a result of this discharge in unnatural quantities which are or may become injurious to any designated use.

#### c. Sampling Locations

The sampling locations for the pollutants indicated in Part I.A.7 of this permit shall be representative of the effluent and consistent with the locations approved by the Department.

#### d. Operation and Maintenance Plan

The permittees shall assure that discharges only occur in response to rainfall (or snowmelt) events and cease soon thereafter. Any rehabilitation and maintenance needs shall be addressed to ensure adequate sewer capacity and functionality. This may be accomplished through continued implementation of the approved Operation and Maintenance Plan.

#### e. Treatment Facility Dewatering

The treatment facility shall be promptly dewatered (if applicable) in accordance with the Department Approved Consolidated Annual Report possible following the need to divert flow to the facility and shall be maintained in readiness for use. The discharge of sludge or residual accumulations from the facility to the surface waters is prohibited.

For this permit while the Regional Operational Plan is being revised, if up to 930 MGD (including recycle) is being processed with secondary treatment at the WRRF and no primary flow is being discharged, then tributary combined or sanitary storage basins in the GLWA system may be dewatered. Such dewatering will not be considered a violation of this permit, even if contrary to the Wet Weather Event definition (see Part II.A). Once a revised Regional Operation Plan is developed, it shall be implemented once reviewed and approved by the Department.

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## 8. Total Residual Chlorine Minimization Program

The goal of the Total Residual Chlorine (TRC) Minimization Program is operate the CSO RTBs and the CSO screening and disinfection facilities in a manner that will provide consistent, effective disinfection while minimizing the discharge of TRC, recognizing the overall goal is compliance with the TRC Final Acute Value of 0.038 mg/l at any point in the receiving stream, unless it is determined by the Department by a permit action that a higher level is acceptable.

In addition, the Operational Goals for this facility are 1.5 mg/l TRC as an event average value and 2.0 mg/l (November – April) or 3.0 mg/l (May – October) TRC as an event instantaneous maximum value.

a. TRC Minimization Assessment (Assessment) (submitted)

The permittees shall prepare and conduct a program to assess the capability of each of the 5 CSO RTBs and screening and disinfection facilities as agreed to (a subset of those listed in Part I.A.6. and Part I.A.7.), to minimize the discharge of TRC. Each Assessment shall be conducted according to a schedule acceptable to the Department. Compliance with the Fecal Coliform Bacteria effluent limits set forth in Part I.A.6. and Part I.A.7. of this permit shall be maintained during each Assessment. Each Assessment shall include an evaluation of various operational practices under a variety of wet weather events to identify measures which can be taken to reduce TRC discharge concentrations. Upon notification by the Department, the permittees shall begin conducting each Assessment over an 18-month period and shall submit a report summarizing the results to the Department within 60 days of completion. An extension of an Assessment period beyond 18 months may be requested by the permittees for approval by the Department in the event that a sufficient number of CSO discharge events have not occurred to allow for an adequate assessment of operational procedures.

Each Assessment report shall include the expected achievable TRC discharge concentrations, recommendations as to specific protocols to be used to manage sodium hypochlorite (NaOCI) dosage rates under various conditions to achieve the Operational Goals, and recommended facility modifications to enhance the ability to control TRC levels while maintaining compliance with the Fecal Coliform Bacteria limits. Specific procedures for adjustment of NaOCI feed rates to minimize the discharge of TRC shall be submitted as part of the Operational Plan (and revised as appropriate in annual updates), as required by Part I.A.15.e. of this permit. The TRC minimization procedures, developed as part of each Assessment, shall be implemented upon approval by the Department.

- b. Operational Goals
  - Upon completion of each Assessment, the permittees shall operate the facility with a goal of 1.5 mg/l TRC as an event average value and a goal of 2.0 mg/l (November April) or 3.0 mg/l (May October) TRC as an event instantaneous maximum value. If upon completion of an Assessment, the permittees determine the facility can achieve lower TRC goals than those specified above, then the permittees shall operate the facility to achieve the lower TRC levels. If either TRC goal is exceeded for a CSO discharge event, the permittees shall submit a written report to the Department within seven (7) days explaining the cause of the exceedance and describing the corrective measures that will be undertaken to prevent a future recurrence.
- c. In-Stream TRC Effluent Plume Evaluation (submitted)
  The permittees shall conduct an evaluation of the in-stream TRC effluent plume attributable to each of the agreed-to 5 CSO RTBs screening and disinfection facility discharges. The evaluation shall identify the location and size of the TRC effluent plume during and after CSO discharge events and identify the maximum TRC concentrations in-stream at various downstream locations. Upon notification by the Department to begin conducting each Assessment (Part I.A.8.a.), the permittees shall have 60 days to submit a TRC effluent plume work plan describing the proposed evaluation including sampling locations and a proposed implementation schedule such that the In-Stream TRC Effluent Plume Evaluation shall occur after completion of each Assessment and when the operational goals begin. The permittees shall implement the In-Stream TRC Effluent Plume Evaluation following the schedule upon Department approval of the TRC effluent plume work plan. The permittees shall submit a report documenting the results of the TRC Effluent Plume Evaluation within 90 days after completion of the field work.
- d. Permit Re-Opener Clause
   Upon completion of each TRC Minimization Assessment and each In-Stream TRC Effluent Plume
   Evaluation, the Department may reevaluate the need for TRC effluent limitations. This permit may be

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modified in accordance with applicable laws and rules to incorporate such revisions as may be necessary to comply with Water Quality Standards at the time of discharge.

e. Best Management Practices/Operator Coordination Work Group (Work Group)
The permittees shall attend and participate in at least quarterly Work Group meetings with representatives from other CSO facilities in Southeast Michigan to exchange information and share experiences relating to the operation and maintenance of CSO control facilities. Such Work Group meetings shall be used to develop Best Management Practices (BMPs) relating to CSO RTB operation, with an initial focus on actions to minimize the TRC discharge levels. At a minimum, the Work Group shall include representatives of the following CSO facilities: Birmingham CSO RTB, Bloomfield Village CSO RTB, Dearborn CSO, GLWA WRRF CSO Facilities, Inkster-Dearborn Heights CSO, Oakland County-Acacia Park (Acacia Park CSO Drainage District, Village of Beverly Hills, City of Birmingham), Redford Township CSO, River Rouge CSO, Wayne County – Dearborn Heights CSO, Wayne County – Inkster CSO, Wayne County – Inkster CSO, Wayne County – Inkster – Dearborn Heights CSO, and Wayne County – Redford – Livonia CSO. The Work Group shall submit an annual report summarizing the meetings and BMPs developed to the Department by March 1st of each year.

# 9. Additional Monitoring Requirements

As a condition of this permit, the permittees shall monitor the discharge from monitoring points 049F and 050A for the constituents identified below. This monitoring is an application requirement of 40 CFR 122.21(j), effective December 2, 1999. Testing shall be conducted in <u>October 2019</u>, <u>May 2020</u>, <u>March 2021</u>, and <u>August 2021</u>. Grab samples shall be collected for total phenols, and the Volatile Organic Compounds identified below. For all other parameters, 24-hour composite samples shall be collected.

Test species for whole effluent toxicity monitoring shall include fathead minnow **and** *Ceriodaphnia dubia*. If the permittees have received Department approval to conduct chronic toxicity testing using the more sensitive species identified in the toxicity database, the first three (3) tests required above may be performed using the more sensitive species. The last (4<sup>th</sup>) test shall be conducted using both species. Testing and reporting procedures shall follow procedures contained in EPA-821-R-02-013, "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" (Fourth Edition). When the effluent ammonia nitrogen (as N) concentration is greater than 3 mg/l, the pH of the toxicity test shall be maintained at a pH of 8 Standard Units. Acute and chronic toxicity data shall be included in the reporting for the toxicity test results. Toxicity test data acceptability is contingent upon the validation of the test method by the testing laboratory. Such validation shall be submitted to the Department upon request.

For selected parameters required under this section, the maximum acceptable quantification levels and analytical methods shall be as specified under Quantification Levels and Analytical Methods for Selected Parameters, below, unless a higher quantification level is appropriate because of sample matrix interference. Justification for higher quantification levels shall be submitted to the Department within 30 days of such determination.

The results of such additional monitoring shall be submitted with the application for reissuance (see the cover page of this permit for the application due date). The permittees shall notify the Department within 14 days of completing the monitoring for each month specified above in accordance with Part II.C.5. Additional reporting requirements are specified in Part II.C.11. The permittees shall report to the Department any whole effluent toxicity test results greater than 1.0  $TU_A$  or 1.0  $TU_C$  within five (5) days of becoming aware of the result. If, upon review of the analysis, it is determined that additional requirements are needed to protect the receiving waters in accordance with applicable water quality standards, the permit may then be modified by the Department in accordance with applicable laws and rules.

Whole Effluent Toxicity chronic toxicity

Hardness calcium carbonate

Metals (	(Total Recoverable)	), C'	yanide and Total Phenols

antimony arsenic barium
beryllium boron cadmium chromium
copper lead nickel

selenium silver thallium zinc

total phenolic compounds

#### Volatile Organic Compounds

acrylonitrile bromoform acrolein benzene chlorobenzene carbon tetrachloride chlorodibromomethane chloroethane 2-chloroethylvinyl ether chloroform dichlorobromomethane 1.1-dichloroethane 1,2-dichloroethane trans-1,2-dichloroethylene 1,1-dichloroethylene 1,2-dichloropropane 1,3-dichloropropylene ethylbenzene methyl bromide methyl chloride methylene chloride 1,1,2,2,-tetrachloroethane tetrachloroethylene toluene 1,1,1-trichloroethane 1,1,2-trichloroethane trichloroethylene vinyl chloride

#### Acid-Extractable Compounds

4-chloro-3-methylphenol2-chlorophenol2,4-dichlorophenol2,4-dimethylphenol4,6-dinitro-o-cresol2,4-dinitrophenol2-nitrophenol4-nitrophenolPentachlorophenolphenol2,4,6-trichlorophenol

## Base/Neutral Compounds

acenaphthene acenaphthylene anthracene benzo(a)anthracene benzo(a)pyrene benzo(k)fluoranthene bis(2-chloroethoxy)methane bis(2-ethylhexyl)phthalate 4-bromophenyl phenyl ether 4-chlorophenyl phenyl ether chrysene dibenzo(a,h)anthracene 1,2-dichlorobenzene 3.3'-dichlorobenzidine diethyl phthalate 2.6-dinitrotoluene 1,2-diphenylhydrazine fluoranthene hexachlorobutadiene Hexachlorobenzene indeno(1,2,3-cd)pyrene isophorone naphthalene n-nitrosodi-n-propylamine n-nitrosodimethylamine 1,2,4-trichlorobenzene pyrene

anthracene
3,4-benzofluoranthene
bis(2-chloroethyl)ether
butyl benzyl phthalate
di-n-butyl phthalate
1,3-dichlorobenzene
dimethyl phthalate
fluoranthene
hexachlorocyclo-pentadiene
naphthalene
n-nitrosodiphenylamine

benzidine
benzo(ghi)perylene
bis(2-chloroisopropyl)ether
2-chloronaphthalene
di-n-octyl phthalate
1,4-dichlorobenzene
2,4-dinitrotoluene
fluorene
hexachloroethane
nitrobenzene
phenanthrene

#### Quantification Levels and Analytical Methods for Selected Parameters

Parameter	Quan Level	tification	Analytical Method
1,2-Diphenylhydrazine (as Azobenzene)	3.0	ug/l	
2,4,6-Trichlorophenol	5.0	ug/l	
2,4-Dinitrophenol	19	ug/l	
3,3'-Dichlorobenzidine	1.5	ug/l	EPA Method 605
4-chloro-3-methylphenol	7.0	ug/l	
4,4'-DDD	0.05	ug/l	EPA Method 608
4,4'-DDE	0.01	ug/l	EPA Method 608
4,4'-DDT	0.01	ug/l	EPA Method 608
Acrylonitrile	1.0	ug/l	
Aldrin	0.01	ug/l	EPA Method 608
Alpha-Hexachlorocyclohexane	0.01	ug/l	EPA Method 608
Antimony, Total	1	ug/l	
Arsenic, Total	1	ug/l	
Barium, Total	5	ug/l	
Benzidine	0.1	ug/l	EPA Method 605
Beryllium, Total	1	ug/l	
Beta-Hexachlorocyclohexane	0.01	ug/l	EPA Method 608

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Parameter	Quan Level	tification	Analytical Method
Bis (2-Chloroethyl) Ether	1.0	ug/l	
Boron, Total	20	ug/l	
Cadmium, Total	0.2	ug/l	
Chlordane	0.01	ug/l	EPA Method 608
Chromium, Hexavalent	5	ug/l	
Chromium, Total	10	ug/l	
Copper, Total	1	ug/l	
Cyanide, Available	2	ug/l	EPA Method OIA 1677
Cyanide, Total	5	ug/l	
Delta-Hexachlorocyclohexane	0.01	ug/l	EPA Method 608
Dieldrin	0.01	ug/l	EPA Method 608
Di-N-Butyl Phthalate	9.0	ug/l	
Endosulfan I	0.01	ug/l	EPA Method 608
Endosulfan II	0.01	ug/l	EPA Method 608
Endosulfan Sulfate	0.01	ug/l	EPA Method 608
Endrin	0.01	ug/l	EPA Method 608
Endrin Aldehyde	0.01	ug/l	EPA Method 608
Fluoranthene	1.0	ug/l	
Heptachlor	0.01	ug/l	EPA Method 608
Heptachlor Epoxide	0.01	ug/l	EPA Method 608
Hexachlorobenzene	0.01	ug/l	EPA Method 612
Hexachlorobutadiene	0.01	ug/l	EPA Method 612
Hexachlorocyclopentadiene	0.01	ug/l	EPA Method 612
Hexachloroethane	5.0	ug/l	
Lead, Total	1	ug/l	
Lindane	0.01	ug/l	EPA Method 608
Lithium, Total	10	ug/l	
Mercury, Total	0.5	ng/l	EPA Method 1631E
Nickel, Total	5	ug/l	
PCB-1016	0.1	ug/l	EPA Method 608.3
PCB-1221	0.1	ug/l	EPA Method 608.3
PCB-1232	0.1	ug/l	EPA Method 608.3
PCB-1242	0.1	ug/l	EPA Method 608.3
PCB-1248	0.1	ug/l	EPA Method 608.3
PCB-1254	0.1	ug/l	EPA Method 608.3
PCB-1260	0.1	ug/l	EPA Method 608.3
Pentachlorophenol	1.8	ug/l	LI A WELIOU 000.3
Perfluorooctane sulfonate (PFOS)	2.0	ng/l	ASTM D7979 or an isotope dilution method (sometimes referred to as Method 537 modified)
Perfluorooctanoic acid (PFOA)	2.0	ng/l	ASTM D7979 or an isotope dilution method (sometimes referred to as Method 537 modified)
Phenanthrene	1.0	ug/l	
Selenium, Total	1.0	ug/l	

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Parameter	Quantification Level	Analytical Method
Silver, Total	0.5 ug/l	
Strontium, Total	1000 ug/l	
Sulfide, Dissolved	20 ug/l	
Thallium, Total	1 ug/l	
Toxaphene	0.1 ug/l	EPA Method 608
Vinyl Chloride	0.25 ug/l	
Zinc, Total	10 ug/l	

## 10. Pollutant Minimization Program for Total Mercury and PCBs

The goal of the Pollutant Minimization Program is to maintain the effluent concentration of total mercury at or below 1.3 ng/l and the final effluent limitations for Total Polychlorinated Biphenyls (PCBs). The permittees shall continue to implement the Pollutant Minimization Program approved on November 9, 1995, and updated in October, 1996, and modifications thereto, to proceed toward the goal. The Pollutant Minimization Program includes the following:

- a. an annual review and semi-annual monitoring of potential sources of mercury and PCBs entering the wastewater collection system, including wet weather sources such as runoff/contributions from contaminated sites in the collection area;
- a program for quarterly monitoring of influent and periodic monitoring of sludge for mercury and PCBs;
   and
- c. implementation of reasonable cost-effective control measures when sources of mercury and/or PCBs are discovered. Factors to be considered include significance of sources, economic considerations, and technical and treatability considerations.

On or before October 1st of each year, the permittees shall submit a status report for the previous calendar year to the Department that includes 1) the monitoring results for the previous year, 2) an updated list of potential mercury and/or PCB sources, and 3) a summary of all actions taken to reduce or eliminate identified sources of mercury and/or PCBs.

Any information generated as a result of the Pollutant Minimization Program set forth in this permit may be used to support a request to modify the approved program or to demonstrate that the Pollutant Minimization Program requirement has been completed satisfactorily.

A request for modification of the approved program and supporting documentation shall be submitted in writing to the Department for review and approval. The Department may approve modifications to the approved program (approval of a program modification does not require a permit modification), including a reduction in the frequency of the requirements under items a. and b.

This permit may be modified in accordance with applicable laws and rules to include additional mercury and/or PCB conditions and/or limitations as necessary.

# 11. Water Resource Recovery Facility Wet Weather Operational Plan

The approved Water Resource Recovery Facility Wet Weather Operational Plan provides the protocol for operations during the interim period before full completion of the Long-term CSO Control Plan. This plan details the necessary requirements to maximize wet weather treatment at the WRRF, while complying with effluent limits and all other conditions of this permit, and minimizing untreated combined sewage discharges in the tributary collection system.

The GLWA WRRF Wet Weather Operational Plan shall be coordinated with the Collection System and CSO Treatment Facilities Operational Plan that is required in accordance with Part I.A.15.d. of this permit. Annually, on or before April 1st, the permittees shall submit an update of the Water Resource Recovery Facility Wet Weather Operational Plan in conjunction with the Collection System and CSO Treatment Facilities Operational Plan update as part of the Consolidated Annual Report to the Department for review and approval.

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## 12. Facilities Improvement Program

The permittees shall continue to meet the sludge dewatering, conveyance, and final disposal requirements; submit and implement the solids disposal plans; correct the alum sludge issue; submit the WRRF shutdown schedules; and develop and implement the asset management program as detailed below.

- a. WRRF Solids Processing Requirements and Corrections
  - 1) Capacity for sludge dewatering, conveyance, and final disposal; Required maximum solids inventory loads.

The permittees shall ensure that sludge dewatering equipment, sludge conveyance equipment, and final sludge disposal capability is available at the GLWA WRRF as follows:

- a) The permittees shall ensure that the WRRF sludge dewatering equipment, sludge conveyance equipment, and final sludge disposal capability are maintained for use; and in good operational working order to meet the following requirements:
  - (1) Average capacity of 500 dry tons per day (dtpd), calculated as a calendar monthly average;
  - (2) Peak capacity of 850 dtpd, calculated as a 10-day average;
  - (3) The peak 10-day average shall be available during any wet weather event when the WRRF is operated in the "Storm Period" of the currently approved WRRF Wet Weather Operational Plan as required by Part I.A.11.

The permittees shall also:

- (4) Notify the Department within one business day if solids are recycled from the gravity thickeners to the head of the WRRF for more than 72 hours and provide an explanation for the recycled solids. Recycled solids are defined as a TSS overflow concentration of 1000 mg/l or greater from Complex A thickeners;
- (5) Maintain a monthly average solids inventory of less than 750 dtpd, when there are less than 5 days of discharge from Outfall 049A during the month, and maintain a calendar quarterly average solids inventory not to exceed 1000 dtpd. Solids inventory is defined as the total solids in gravity thickener complexes A and B, determined daily in dtpd;
- (6) This Section will be reviewed during the next NPDES reissuance based on WRRF performance; and
- (7) The permittees are allowed to submit to the Department for review and approval a request to modify the numerical levels specified in Part I.A.12.a. of this permit. This modification request shall include supporting rationale for the revised numerical levels.

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- 2) Long-Term Solids Disposal Plan
  - a) The permittees submitted to the Department for review and approval a Long-Term Solids Disposal Plan (LTSDP). This Solids Disposal Plan is designed to ensure the availability of sufficient sludge dewatering equipment and sludge disposal capability to meet the capacity requirements specified in Parts I.A.12.a.1).a).(1)&(2) of this permit. The permittees shall implement the LTSDP in accordance with the following schedule:
    - (1) On or before December 31, 2018, (submitted) the permittees shall submit for approval, a disposal plan for 250 dtpd. This requirement is based on the LTSDP approved on September 24, 2013. Upon notification from the Department, the permittees shall implement the approved disposal plan;
    - (2) On or before December 31, 2025, the permittees shall complete implementation of the approved plan referenced in item (1) above;
  - b) The GLWA are advised that implementation of individual elements of the LTSDP may require Part 41 wastewater construction permits or may require other Department approvals.
- 3) Alum Sludge Correction

The permittees shall continue to implement the approved plan to correct the solids dewatering concerns at the WRRF due to alum sludge discharges from GLWA water treatment plants (WTPs) into the collection system.

Annually, on or before September 1<sup>st</sup> the permittees shall submit a report to the Department describing if the implemented plan continued to meet the conditions specified above for the preceding fiscal year (July 1 – June 30).

Part 41 construction permits at the WRRF and/or Act 399 construction permits at the specific WTPs may be needed depending on the components of the approved plan.

- b. WRRF Quarterly Shutdown Schedules
  - On or before December 1, March 1, June 1, and September 1, the permittees shall submit quarterly WRRF Shutdown Schedules, until notified in writing by the Department. Consistent with the quarterly dates indicated above, these schedules shall be submitted to the Department in a mutually agreeable format one month prior to the start of each calendar quarter for review and approval. Each quarterly schedule shall detail the primary treatment capacity, secondary treatment capacity, and sludge processing capacity that is planned to be available during the upcoming quarter, considering coordinated shutdowns necessary to complete all rehabilitation and other projects. The shutdown schedules shall be proposed to minimize environmental impact and maximize available treatment during construction of all projects, consistent with the requirements of the rules associated with Act 451, Part 41, being 299.2943 and 299.2955(1) and (3).
- c. Operation, Maintenance & Replacement/Asset Management
  The permittees shall at all times properly operate and maintain all facilities (i.e., sewer system,
  treatment works, as defined in Part 41 of Act 451, 1994 as amended, and control systems) that are
  installed or used by the permittees to operate the treatment works and sewer system and achieve and
  maintain compliance with the conditions of this permit. The requirements of an asset management
  program contain goals of effective performance, adequate funding, and adequate operator staffing and
  training. Asset management is a planning process focused on gaining optimum value for each asset
  and providing the financial resources to rehabilitate and replace them when necessary; Asset
  management is centered on a framework of five (5) core elements: the current state of the assets, the
  required sustainable level of service, the assets critical to sustained performance, the best-value lifecycle costs, and the best long-term funding strategy.
  - 1) The permittees shall continue to implement the approved Asset Management Program that addresses the following items:
    - A comprehensive fixed asset inventory that is maintained, managed, and updated within a computerized maintenance management system (CMMS),

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A comprehensive inventory of the collection system fixed assets and collection system map,

- A Preventive Maintenance Program that may include predictive and reliability centered maintenance.
- A Needs Assessment updated every five years as part of the Project Plan (<u>due on or before October 1, 2021</u>), including condition assessment and evaluation of service level,
- An assessment of asset criticality and risk management,
- A capital planning process,
- A Scheduled Replacement Program (SRP) for assets,
- Monitoring and periodic performance evaluation through Key Performance Indicators (KPIs),
- Management oversight of system performance.

The permittees' Asset Management Program submitted on January 1, 2014, was approved on January 14, 2014, and substantially revised on September 29, 2017.

- 2) An Annual Report covering implementation of the Asset Management Program during the prior Fiscal Year (July 1 June 30) shall be prepared by the permittees and submitted to the Department on or before October 1st. The Annual Report shall include:
  - a) A description and evaluation of the sufficiency of the staffing levels maintained during the year,
  - b) A description and evaluation of the sufficiency and adequacy of inspections and maintenance activities conducted and corrective actions taken during the previous year,
  - Expenditures for collection system maintenance activities, treatment works
    maintenance activities, corrective actions, and capital investment during the previous
    year, compared with budged/projected expenditures, including an evaluation of the
    sufficiency of expenditures,
  - d) A summary of asset/areas identified for inspection/action (including capital improvement) in the upcoming year based on the five (5) core elements and the criticality and risk analysis,
  - e) A maintenance budget and capital improvement budget for the upcoming year, based on implementation of an effective asset management program that meets the five (5) core elements.
  - f) An updated estimate of the revenue necessary to complete anticipated OM&R activities, the associated rate schedule impact, and an assessment of the adequacy of the revenue to perform necessary OM&R work, and
  - g) A description of the progress made towards completion of the outstanding tasks as described in the previous year's Asset Management Annual Report and an updated schedule for completion of any outstanding tasks.
- d. Staffing Plan
  - A Staffing Plan, as required by ACO-00131, has been approved by the Department. The GLWA shall provide an adequate staffing level, in accordance with the approved Staffing Plan, to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit. During the term of ACO-00131, a change in the minimum staffing level may be requested by the GLWA by submittal of a revised Staffing Plan, including training requirements, and may be revised only by mutual agreement in writing between the GLWA and the Department. Should ACO-00131 be terminated, then the staffing plan shall be updated as required by the Operations and Maintenance Manual (Part II.C.14 of this permit), and an up to date copy of the manual shall be kept at the WRRF. The Department may review the manual in whole or in part (i.e. staffing) at their discretion and require modifications to it if portions are determined to be inadequate.

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e. Key Performance Indicator Monthly Report
The permittee shall update the Key Performance Indicator (KPI) report monthly. If Administrative
Consent Order No. ACO-000131, as amended, is terminated, the KPI report shall be submitted by the
last day of the month following the termination of the ACO.

## f. Public Participation

The permittees will participate in Department initiated public outreach meetings during the term of this permit as resources allow and provided there is adequate notification by the Department.

# 13. Reopener for Primary and Secondary Treatment Capacity

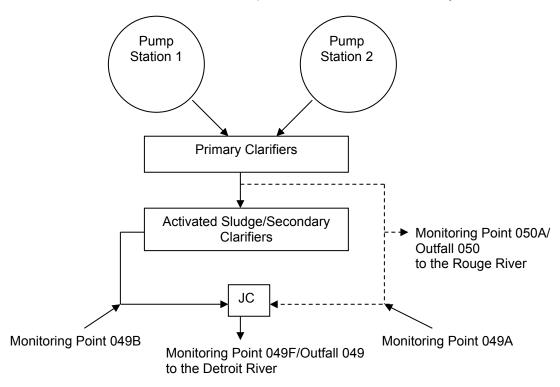
The permittees are required to maintain a wet weather primary treatment capacity of 1700 MGD (raw) and wet weather secondary treatment capacity of 930 MGD (which includes recycle). When the elevation of the influent wet well is greater than 85 feet and the facility is not pumping at 1700 MGD (raw), the discharge from untreated combined sewage overflow (CSO) upstream of the facility are not authorized, unless caused by localized storm conditions.

These required wet weather treatment capacities may be revised if new/altered wet weather conditions (such as initiation of operation of upstream CSO facilities, etc.) indicate that either less or more flow can be effectively processed. The criteria used to determine whether the required wet weather primary treatment capacities should be revised must include additional plant evaluation under the updated conditions, using testing procedures approved by the Department.

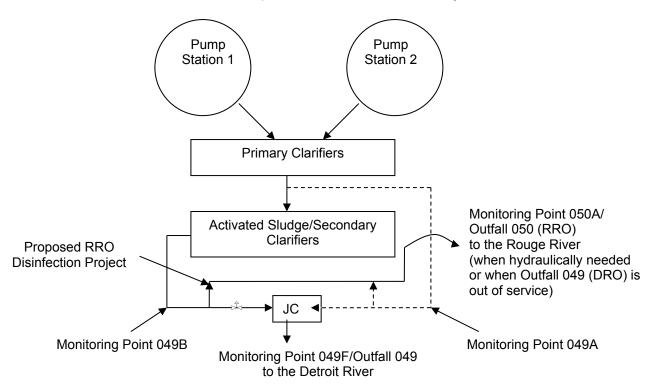
For reference, outfall/monitoring point designations are shown on the following diagrams:

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Prior to Initiation of Operation of RRO Disinfection Project



After Initiation of Operation of RRO Disinfection Project



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# 14. Outfalls Prohibited from Discharge to Combined Sewer System

The following Outfalls are prohibited from discharge except as provided for in Part II.C.9.:

OUTFALL 004	LOCATION Fairview (DWF) Pump Station (P28 through P31) Parkview & Detroit River - Emergency only	<u>LAT/LONG</u> 42°21'20" 082°58'01"	RECEIVING STREAM Discharge to Detroit River (Stop-logged)
014	Dubois (B12) Dubois & Detroit River	42°20'01" 083°01'19"	Detroit River
051	Carbon (B46) Carbon & Rouge River	42°17'07" 083°08'17"	Rouge River
054	Fort St. (DWSD Northwest) Interceptor) (B50) South Fort St. & Rouge River (West Shore)	42°17'25" 083°08'35"	Rouge River
056	Fort St. (Oakwood District) (B49) South Fort St. & Rouge River (West Shore)	42°17'27" 083°08'33"	Rouge River
080	Fox Creek Backwater Gates (B01) East Jefferson & Fox Creek.	42°22'28" 082°56'27"	Fox Creek to Detroit River

The permittees shall provide for ongoing monitoring (Flow, Duration) for these outfalls should they discharge. This monitoring shall be used to comply with the requirements of Section 324.3112(a) of The Michigan Act (See Part I.A.16.).

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# 15. Discharges from Combined Sewer System

a. Limited Discharge Authorization

The permittees are required to utilize, to the maximum extent practicable, available sewerage system transportation capabilities for the delivery of combined sewage to treatment facilities. For an interim period during which the amended Long-Term CSO Control Plan is to be implemented, the permittees are authorized to discharge during wet weather events (see Part II.A.) combined sewage from the outfalls and locations listed below in accordance with the following conditions:

- 1) a flow rate equivalent to the peak dry weather flow rate has been conveyed to the secondary treatment facilities for treatment without bypass,
- 2) the total sewerage system storage and transportation capacity for conveyance of wet weather flows to the treatment facilities for treatment has been utilized within the hydraulic design constraints of the system,
- 3) all primary treatment plant capacity and secondary treatment plant capacity has been utilized in accordance with the approved WRRF Wet Weather Operation Plan (Part 1.A.11.), unless a storm event is localized to the extent that the hydraulic capacity of a portion of the collection system (considering storage) is exceeded prior to reaching plant capacities, and
- 4) the permittees are in full compliance with all requirements as set forth in Part I.A.16. Combined Sewer Overflow discharges to the Rouge River, the Detroit River, and the Old Channel of the Rouge River are authorized until prohibited, eliminated, or adequately treated to meet water quality standards at times of discharge in accordance with the requirements below, and as specified in Part 1.A.15.f. and g.
- 5) the outfalls that immediately follow this paragraph are included in the Limited Discharge Authorization. There are some untreated CSO outfalls that appear to discharge only during extreme events. Extreme is defined as; (a) no more than one untreated discharge in ten years from a CSO outfall during the April 1 through October 31 growth period, (b) modeled to not discharge at the 25 year 24 hour event (during growth period, with normal soil moisture, rainfall distributed to a SCS Type II distribution), or (c) monitored to occur only at rainfalls greater than 4 inches in a 24 hour period. The Department does not intend to require construction of treatment facilities at the following outfalls should they continue to only discharge at the extreme event. This addresses CSO outfalls consistently with SSO outfalls according to the 2002 SSO Policy and 2003 Clarification Statement. The list of untreated CSO outfalls that only discharge at the extreme event is flexible and may be adjusted with the adaptive management CSO correction program.

OUTFALL 029	LOCATION Rosa Parks (B27) Rosa Parks & Detroit River	<u>LAT/LONG</u> 42°19'13" 083°03'56"	RECEIVING STREAM Detroit River
030	Vermont (B28) Vermont (extended) & Detroit River	42°19'06" 083°04'09"	Detroit River
037	McKinstry (B35) McKinstry & Detroit River	42°18'19" 083°05'13"	Detroit River
042	Campbell (B40) Campbell & Detroit River	42°18'01" 083°05'30"	Detroit River
048	Pulaski (B59A &B) Pulaski & Rouge River	42°17'21" 083°07'11"	Old Channel Rouge River

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6) the outfalls that immediately follow this paragraph are also included in the Limited Discharge Authorization. There are some untreated CSOs that appear to discharge at a minimal frequency and volume. Minimal discharge is defined as actual monitoring of a volume less than 0.3 MG of discharge over a five year period. The Department does not intend to require construction of treatment facilities at the following outfalls should they continue to only discharge at this minimal frequency and volume. The list of untreated CSO outfalls that only discharge at a minimal frequency and volume is flexible and may be adjusted with the adaptive management CSO correction program.

OUTFALL 024	LOCATION Griswold (B22) Griswold & Detroit River	<u>LAT/LONG</u> 42°19'35" 083°02'28"	RECEIVING STREAM Detroit River
032	Twenty-First St. (B30) Twenty-First St. & Detroit River	42°18'53" 083°04'31"	Detroit River
034	West Grand Blvd. (B32) West Grand Blvd. & Detroit River	42°18'41" 083°04'50"	Detroit River
035	Swain (B33) Swain & Detroit River	42°18'35" 083°04'56"	Detroit River
036	Scotten (B34) Scotten & Detroit River	42°18'31" 083°05'02"	Detroit River
041	Junction (B39) Junction & Detroit River	42°18'07" 083°05'25"	Detroit River
043	Dragoon (Livernois Relief) (B41) Dragoon (extended) & Detroit River	42°17'49" 083°05'41"	Detroit River
047	Dearborn St. (B45) Dearborn St. & Rouge River	42°17'26" 083°06'59"	Old Channel Rouge River
073	Riverdale (B79) Florence & Rouge River	42°24'36" 083°16'13"	Rouge River

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7) the outfalls that immediately follow this paragraph are also included in the Limited Discharge Authorization. These are untreated CSOs that represent the remaining non-core outfalls that will be required to be addressed under the adaptive management CSO correction program. They include the high-priority non-core CSOs. Note that the list of untreated CSO outfalls is flexible and may be adjusted with the adaptive management CSO correction program.

OUTFALL 005	LOCATION McClellan (B03) McClellan (extended) & Detroit River	<u>LAT/LONG</u> 42°21'20" 082°58'02"	RECEIVING STREAM Detroit River
006	Fischer (B04) Fischer & Detroit River	42°21'16" 082°59'15"	Detroit River
007	Iroquois (B05) Iroquois & Detroit River	42°21'14" 082°59'21"	Detroit River
008	Helen (B06) Helen & Detroit River	42°20'40" 083°00'06"	Detroit River
009	Mt. Elliott (B07) Mt. Elliott & Detroit River	42°20'24" 083°00'28"	Detroit River
011	Adair (B09) Adair & Detroit River	42°20'16" 083°00'41"	Detroit River
012	Joseph Campau (B10) Joseph Campau & Detroit River	42°10'08" 083°01'02"	Detroit River
016	Orleans Relief (B15) Orleans (Eastside of) & Detroit River	42°19'54" 083°01'36"	Detroit River
017	Orleans (B14) Orleans (Westside of) & Detroit River	42°19'53" 083°01'37"	Detroit River
018	Riopelle (B16) Riopelle & Detroit River	42°19'52" 083°01'42"	Detroit River
019	Rivard (B17) Rivard & Detroit River	42°19'48" 083°01'55"	Detroit River
020	Hastings (B18) Schweizer Place & Detroit River	42°19'46" 083°02'03"	Detroit River
021	Randolph (B19) Randolph & Detroit River	42°19'29" 083°02'26"	Detroit River
022	Bates (B20) Bates & Detroit River	42°19'38" 083°02'32"	Detroit River
023	Woodward (B21) Woodward & Detroit River	42°19'37" 083°02'35"	Detroit River
025	First-Hamilton (B23) First (extended) & Detroit River	42°19'30" 083°02'57"	Detroit River
026	Third St. (B24) Third St. & Detroit River	42°19'28" 083°03'07"	Detroit River

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OUTFALL 027	LOCATION Cabacier (B25) Brooklyn (extended) & Detroit River	LAT/LONG 42°19'24" 083°03'26"	RECEIVING STREAM Detroit River
028	Eleventh St. (B26) Eleventh St. & Detroit River	42°19'17" 083°03'46"	Detroit River
031	Eighteenth St. (B29) Eighteenth St. & Detroit River	42°18'57" 083°04'31"	Detroit River
033	Twenty-Fourth St. (B31) Twenty-Fourth St. & Detroit River	42°18'47" 083°04'42"	Detroit River
038	Summit-Clark (B36) Summit & Detroit River	42°18'14" 083°05'18"	Detroit River
039	Ferdinand (B37) Ferdinand & Detroit River	42°18'13" 083°05'19"	Detroit River
040	Morrell (B38) Morrell & Detroit River	42°18'10" 083°05'22"	Detroit River
044	Schroeder (B42) Schroeder & West Jefferson	42°17'32" 083°06'00"	Detroit River
046	Cary (B44) Cary & Rouge River	42°17'29" 083°06'47"	Old Channel Rouge River
059	Warren (B54) West Warren & Rouge River	42°20'34" 083°14'57"	Rouge River
060	Tireman (B56, 57 & 58) Tireman & Rouge River	42°20'59" 083°14'51"	Rouge River
061	West Chicago (B60, 61 & 62) West Chicago & Rouge River (East Shore)	42°21'46" 083°14'56"	Rouge River
062	West Chicago (B63) West Chicago & Rouge River (West Shore)	42°21'52" 083°15'18"	Rouge River
063	Plymouth (B64) Plymouth & Rouge River	42°22'18" 083°15'21"	Rouge River
064	Glendale Relief (B65) Rouge Park Golf Course	42°22'33" 083°14'52"	Rouge River
065	Lahser (Dolson) (B67 & 68) Lahser & Rouge River	42°22'52" 083°15'23"	Rouge River
066	Schoolcraft (B70) Jeffries Freeway, I-96 & Rouge River	42°23'07" 083°16'02"	Rouge River

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OUTFALL 067	LOCATION West Parkway (B69) Jeffries Freeway, I-96 & Rouge River	<u>LAT/LONG</u> 42°23'07" 083°16'02"	RECEIVING STREAM Rouge River
068	Brammel (B71) Ray & Rouge River	42°23'30" 083°15'56"	Rouge River
069	Lyndon (B72) Lyndon & Rouge River	42°23'35" 083°15'57"	Rouge River
072	Puritan (B77) Puritan & Rouge River (East Shore)	42°24'28" 083°16'14"	Rouge River
074	McNichols (B80 & 81) West McNichols & Rouge River	42°24'52" 083°15'59"	Rouge River
075	Glenhurst (B82) Glenhurst & Rouge River	42°25'32" 083°16'19"	Rouge River
077	Seven Mile (B85) West Seven Mile & Rouge River (East Shore)	42°25'44" 083°16'09"	Rouge River
079	Pembroke (B87) Frisbee & East Shore Rouge River	42°26'02" 083°16'24"	Rouge River

Nothing in this section of the permit shall be construed to limit the State of Michigan's ability to pursue remedies under the Michigan Act.

- b. Qualified Operations and Maintenance Manager for CSO Discharges
  The permittees shall place the wastewater collection system under the supervision of a qualified
  Operations and Maintenance Manager who shall serve as the contact person for the Department
  regarding combined sewer discharges. The permittees may replace the manager at any time and shall
  notify the Department within ten days after the replacement.
- c. Disconnection of Eaves Troughs and Roof Downspouts
  The permittees shall eliminate direct connections of eaves troughs and roof downspouts to the sewer system throughout the service area tributary to the Upper Rouge CSO outfalls (Outfalls 059-069, 072-075, 077, and 079). This requirement shall be completed for residential property and commercial and industrial properties or as approved by the Department consistent with the permittees' implementation of the Green Storm Water Infrastructure program. In addition, the permittees shall eliminate direct connections of eave troughs and roof downspouts in the service areas tributary to the CSO RTBs, to the CSO Screening & Disinfection Facilities, and to the remaining untreated CSOs based upon the plan detailed in the revised Long-term Control Program. This requirement does not apply if the permittees demonstrates that the disconnection of eaves troughs and roof downspouts is not a cost-effective means of reducing the frequency or duration of combined sewer overflows or of maintaining compliance with this permit. Such a demonstration and supporting documentation shall be submitted to the Department for approval.
- d. Collection System and CSO Treatment Facilities Operational Plan The permittees shall continue implementation of the approved Collection System and CSO Treatment Facilities Operational Plan (Operational Plan). The implementation of the Operational Plan shall be coordinated with the WRRF Wet Weather Operational Plan that is required for development and implementation in accordance with Part I.A.11. of this permit.

On or before April 1 (annually), the permittees shall submit a revised Operational Plan for Department review and approval, which incorporates all changes made to the plan during the last calendar year (items 1-12 below), and supplies the annual discharge documentation (item 13 below). Any changes to the Operational Plan that affect the rate, volume, or characteristics of the discharge, or the system

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storage and transportation for conveyance of wet weather flows, shall be submitted to the Department and approved prior to implementation. The operational plan shall define the hydraulic design constraints of the system during both dry and wet weather operation.

The plan shall include:

- 1) the procedures utilized at the permittees' CSO RTBs and Screening & Disinfection Facilities for adjustment of NaOCI disinfectant feed rates to minimize the discharge of total residual chlorine,
- 2) the procedures and schedule for sampling/monitoring the stored NaOCI disinfectant at the permittees' CSO RTBs and Screening & Disinfection Facilities to determine the concentration of available chlorine and assure that the stored NaOCI is of sufficient strength to provide effective disinfection.
- 3) the procedures for sampling/monitoring the available chlorine concentration of each load of NaOCl delivered to the permittees' CSO RTBs and Screening & Disinfection Facilities,
- 4) if applicable, the procedures utilized at the permittees' CSO RTBs and Screening & Disinfection Facilities for adjustment of dehalogenating reagent feed rates to minimize the discharge of excess reagent,
- 5) the procedures to ensure that the collection and treatment systems are operated to maximize treatment,
- 6) the procedures to ensure that all dry weather flows are conveyed to the treatment facilities for treatment without bypass,
- 7) the hydraulic profile and hydraulic operational elevations for system pump stations, regulators, diversion devices, gates, level sensors, interceptors, etc., to ensure the conveyance of all dry weather flows to the treatment facilities for treatment without bypass,
- 8) the procedures to ensure that the sewerage system hydraulic and storage capacity is identified and fully utilized during wet weather events with eventual treatment of stored flows,
- 9) the procedures to ensure that the greatest quantity of wet weather flow is conveyed to the treatment facilities for treatment to minimize untreated wastewater discharges within the region tributary to the GLWA WRRF,
- 10) the hydraulic profile and hydraulic operational elevations for system pump stations, regulators, diversion devices, gates, level sensors, interceptors, etc., to ensure that the greatest quantity of wet weather flow is conveyed to the treatment facilities for treatment to minimize combined sewage discharges,
- 11) the procedures for ongoing inspection of the sewer system within the permittees' jurisdiction for excessive inflow and infiltration and, where necessary, reduction of the excessive infiltration and inflow sources, and the elimination of unauthorized sewer system connections, and
- 12) identification of the location of the rain gauges.
- 13) The permittees shall submit annual reports that supply the documentation of rainfall and the frequency, duration, and volume of all discharge events during the previous 12-month period (from January 1st through December 31st of the previous year).

The permittees shall continue to pursue the coordination of operational plans (Regional Operational Plan) with tributary communities with the intent of maximizing flow conveyance to the GLWA system and minimizing regional CSOs. Once the Regional Operational Plan is approved by the Department, it shall be implemented.

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- e. New Wastewater Flows
  - Increased levels of discharge of sanitary sewage from the combined sewer overflow outfalls listed in Part I.A.15.a. of this permit, the CSO RTBs (see Part I.A.6. of this permit), and the CSO Screening and Disinfection Facilities (see Part I.A.7. of this permit) are prohibited unless:
  - 1) the increased discharges are the result of new sanitary wastewater flows which, on the basis of sound professional judgment, are within design peak dry weather transportation capacity, or
  - 2) the permittees have officially adopted and are timely implementing a definite program, satisfactory to the Department, leading to the construction and operation of necessary collection, transportation, or treatment devices.
- f. CSO Control Projects
  - 1) Pertinent CSO Program History

The permittees are continuing to implement CSO Control Programs for the various CSO outfalls that discharge to the Rouge River and the Detroit River. Depending upon the particular CSO Control Program and outfall, the permittees are required to provide for the prohibition, elimination, or adequate treatment of combined sewage discharges containing raw sewage, to comply with the Water Quality Standards at times of discharge.

For the CSO outfalls discharging to the Rouge River, the development and implementation of the CSO Control Programs for the various outfalls was initially established based upon the goals of the Rouge River Remedial Action Plan (RAP), which called for a phased approach to solving the water quality problems of the river. Phase I of the Rouge River RAP extended to 1993 and included 1) monitoring and optimization of the existing combined sewer system, 2) detailed local planning for CSO controls and 3) resolution of financing and institutional problems. Phase II of the Rouge River RAP extended to 2005 (2012 for a few limited outfalls) and called for facility construction based on the goal of protection of public health through the elimination of raw sewage discharges and the control of toxic pollutants. Phase III of the Rouge River RAP follows completion of Phase II facilities and includes further improvements, if necessary, to comply with water quality standards at the time of discharge. Due to the demonstrated financial capability of the permittees for City of Detroit residents in 2009, 2012 and 2017, the CSO Control Program for the CSOs discharging to the Rouge River has been revised as reflected below.

For the CSO outfalls discharging to the Detroit River and the Old Channel of the Rouge River, Department approval of the CSO Control Programs is determined on a case-by-case basis with considerations for environmental impacts, public health impacts, technical feasibility, and economic affordability. As was the case for the Rouge River program, the demonstrated financial capability of the permittees for City of Detroit residents in 2009, 2012 and 2017 also affected the CSO Control Program for the Detroit River and the Old Channel of the Rouge River, and has been revised as reflected below.

In addition, the CSO Control Program now includes significant Green Storm water Infrastructure (GSI) requirements that are an important component of the approved Long-Term CSO Control Program.

Previous Long-Term CSO Control Program Documents include:

- Original Long-Term CSO Control Plan (1996)
- Long-Term CSO Control Plan Update (2002)
- Amendment Rouge (2008)
- Amendment Detroit (2008)
- Evaluation of CSO Control Alternative (for the Upper Rouge Outfalls) (December 15, 2009)

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Supplemental Report on Alternative CSO Controls for the Upper Rouge Outfalls)
 (April 30, 2010)

The implementation and completion of the CSO Control Program indicated in Part I.A.15.f. and g. are a necessary and essential requirement of this permit.

### 2) CSO Correction Program Moving Forward

The permittees shall control remaining combined sewer discharges, that are not classified as either extreme or minimal (see Part 1.A.15.a.5) & 6)), to eliminate the discharges or provide adequate treatment of the combined sewage discharges to comply with Water Quality Standards at times of discharge. Upon completion of the RRO disinfection project at the GLWA WRRF and commencing final use of Outfall 050A, the permittees will have completed core elements of their CSO control program and will have achieved a very high level of CSO control. It has been determined that this core level of control has routinely achieved adequate treatment of 95% of the annual combined sewer volume to the collection system. While additional CSO control measures are needed to fully comply with Michigan's Water Quality Standards, as the permittees moves into the final phases of the CSO control program it is appropriate to plan and schedule the remaining control measures, taking into account what has been put in place to date and lessons learned, the unique technical and financial situation of the city of Detroit, and the nature of the remaining CSO challenges.

Based on the foregoing, the permittees shall proceed with remaining CSO corrections using an adaptive management approach. This means that as new information is gained from: (1) evaluation of existing CSO projects and new treatment technologies, (2) evaluation of real-time collection system controls, (3) more accurate and complete data on CSO discharge frequency and volume, (4) benefits of less flow to the collection system from green storm water infrastructure (GSI), (5) benefits of less flow to the collection system due to the City's drainage charge program and new storm water ordinance, (6) benefits of less flow to the collection system as the City continues its sewer rehabilitation program, and (7) any other pertinent information, future CSO controls can be adapted to best provide cost-effective elimination of discharges, adequate treatment of discharges, or classification of discharges as minimal or extreme. Note that for purposes of designing CSO correction projects, minimal discharge is defined as less than 0.3 MG of discharge over a five year period, and extreme is defined as: (a) no more than one untreated discharge in ten years from a CSO outfall during the April 1 through October 31 growth period. (b) modeled to not discharge at the 25 year – 24 hour event (during growth period, with normal soil moisture, rainfall distributed to a SCS Type II distribution), or (c) monitored to occur only at rainfalls greater than 4 inches in a 24 hour period. The performance standard can be based on actual monitoring data normalized for a typical and representative 10-year period of rainfall record or predictively determined based on a calibrated and verified continuous model using a typical and representative 10-year period of rainfall record or other method as determined acceptable by the Department.

The permittees shall propose the non-core CSO correction projects to be designed, constructed, and operated to provide CSO elimination or adequate treatment during the subsequent five-year permit cycle, with each permit reapplication beginning in April 2022. High priority non-core outfalls should generally be addressed first, and outfalls thought of as high priority can change at any time due to implementation of the adaptive management approach. City of Detroit residents within the DWSD service area are "high burden" status based on sewer fees paid as a percentage of median annual household income. Planning of CSO control measures may reflect the permittees' financial capacity for City of Detroit residents determined in the Financial Capability Evaluation that is submitted with each permit reapplication. Based on current and projected CSO capital revenue requirements, and the current average cost per Detroit household for wastewater treatment and CSO control as a percentage of Detroit median household income, the Department does not expect the permittees to propose noncore CSO correction projects with this permit. The permittees shall next propose non-core CSO correction projects for review and approval with the permit reapplication required by April 4, 2022 (and then on April 4, 2027, and April 4, 2032). However, this first tier of non-core projects during 2023 through 2027 is expected to be relatively low cost. Discussion between the permittees and the Department have determined that low cost projects can include connection of CSO discharges to existing CSO treatment facilities, limited storage projects based on the performance standard with no disinfection, outfall gates and in-system storage projects, increased regulator flow capacity, separation projects that use smaller sanitary pipes in existing larger combined sewers to carry sanitary sewage to

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GLWA interceptors while the existing combined sewer becomes a storm sewer, and others. At each application submittal in 2022, 2027, and 2032, the project proposal shall include an updated Financial Capability Evaluation that may also include other financial factors as appropriate. Reissued permits will then be drafted and issued with schedules for approved CSO correction projects that provide continuing progress toward meeting water quality standards. The permittees shall prepare an evaluation of Financial Capability, consistent with state and federal guidance, and shall submit the evaluation with the applications for reissuance of this permit (see the cover page of this permit for the next application due date). The Financial Capability Report shall be in the form of previous reports utilizing the EPA Financial Capability Guidance Document (USEPA 832-B-97-004; February, 1997), and updated with information as may be available in order to assess the permittees' ability to undertake future capital improvement projects related to the Long-Term CSO Control Program. This permit may be modified in accordance with applicable law and rules to incorporate revisions to conform to pertinent laws or rules, or as necessary to address prevailing situations.

Based on information currently available, the following are lists by water body that are high priority CSOs that require control. These outfalls can be revised at any time by the permittees or the Department, reflecting adaptive management considerations. While either the permittees or Department can propose changes at any time, an agreement between the two parties is required and shall be made in writing. The goal will be to complete projects fully addressing all high priority outfalls before October 1, 2037.

Rouge River non-core CSOs (these can be changed by mutual agreement between the permittees and the Department)

High Priority Outfalls
059, 061, 064, 065, 074

Detroit River non-core CSOs (these can be changed by mutual agreement between the permittees and the Department)

High Priority Outfalls
005, 007, 009, 012, 022, 025, 031, 038

#### 3) Adaptive Management Program for this Permit

The adaptive management approach for this permit, before beginning relatively low cost CSO correction projects from 2023-2027, looks at the (1) evaluation of existing CSO projects and new treatment technologies, (2) evaluation of real-time collection system controls, (3) more accurate and complete data on CSO discharge frequency and volume, (4) benefits of less flow to the collection system from green storm water infrastructure (GSI), (5) benefits of less flow to the collection system due to the City's drainage charge program and new storm water ordinance, (6) benefits of less flow to the collection system as the City continues its sewer rehabilitation program, and (7) any other pertinent information. The permittees shall use the above measures, as appropriate, to further reduce untreated CSO discharges on an ongoing basis from the collection system before starting CSO projects from 2023 - 2037.

On or before April 1st (annually starting in 2020), the permittees shall prepare a joint Progress Report that summarizes; 1) significant real time controls that occurred during the preceding calendar year, 2) GSI implementation work during the preceding year that has been undertaken and completed, including a work plan for GSI implementation projects for the next year, documentation of the annual expenditure for the preceding year, and documentation of a cumulative total-spent-to-date on the GSI program, 3) benefits from the new storm water ordinance and green credit program, and 4) benefits from the City sewer rehabilitation program. The report shall summarize the total benefits from all programs by including; a) an updated estimate of the annual volume of wet weather flow that has been removed from the combined sewer system, b) the resulting frequency, volume and duration of CSO discharges (based on actual monitoring), and c) the predicted change modeled continuously and at design events to frequency, volume and duration of CSO discharges based on the calibrated hydraulic model developed in the Master Plan effort. The report shall reference the CSO discharge report submitted under Part I.A.15.d.(13) of this permit and include the pertinent data as a reference. As part of this reporting process, it shall be documented that an average of \$3 million dollars per fiscal year was spent for 2018

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and 2019, and \$2 million dollars per year for 2020, 2021, and 2022 for the GSI program (these expenditures are an enforceable requirement of this permit).

A more complete description of the adaptive management approach includes:

#### a) Real-time Control

The GLWA is in the process of determining if real-time control can be used to help further minimize or even eliminate some untreated CSO discharges. One real-time control discussion currently taking place is the Interim Wet Weather Operations Plan (IWOP). The operational changes agreed to between the permittees and the Department in the IWOP will be reported in the Operational Plan Annual Update (Part 1.A.15 d.). The IWOP is evaluating if critical system regulators, gates, pumps, etc., can be adjusted to allow for more treated CSO, and less untreated CSO from the remaining CSO outfalls. Approved adjustments will be at least acceptable until completion of all non-core CSO correction projects and shall be included in Operational Plan Annual Updates. The evaluation shall include all necessary supporting documentation, including hydraulic model runs if appropriate.

#### b) Green Storm Water Infrastructure (GSI)

For the west side of the City, there is a GSI program in the tributary area to Rouge River Outfalls 059-069, 072-075, 077, and 079. DWSD has developed and is implementing a Department approved GSI Plan for this area consistent with the "Evaluation of CSO Control Alternatives" report dated December 15, 2009. The GSI Plan describes a process for locating, designing, constructing, operating, and evaluating GSI in these sewersheds. GSI implementation shall be planned to capture, reduce, or otherwise control wet weather flows that would otherwise flow into the sewer system and contribute to CSOs, at the permittees' direction. The Plan includes the following elements:

- (1) Provisions for disconnection of residential downspouts and disconnection of commercial and industrial downspouts where feasible (see Part I.A.15.c.).
- (2) Provisions for demolition and removal of vacant structures and replacement with pervious land cover. Where demolition is planned and implemented at sites that will be re-purposed for GSI, the demolition specifications shall ensure that basements and other impervious surfaces at the sites are removed, that the site is raked to remove large rocks and construction debris, and that engineered soils consisting of an appropriate mix of topsoil, compost, and sand is applied following the demolition to support plant growth and promote infiltration.
- (3) Provisions for installation of bioswales along roadways and parking lots to intercept runoff and reduce storm water inputs to the combined sewer system from impervious surfaces.
- (4) Provisions for installation of GSI and/or BMPs at commercial and residential properties to capture and retard storm water runoff.
- (5) Provisions for tree planting for uptake and evapotranspiration along roadways and open spaces.
- (6) Provisions for other GSI implementation projects as determined to be appropriate.
- (8) Processes for public outreach and public participation in selecting sites and implementing GSI practices.
- (9) Procedures/methods for tracking GSI implementation and measuring effects.
- (10) Provisions for ensuring appropriate maintenance of sites where GSI has been implemented, including roles and schedules for maintenance.
- (11) Provisions for ensuring storm water management (runoff reduction) benefits associated with GSI implementation continue over time, even as redevelopment may occur in the sewersheds.

The permittees shall continue to implement GSI in these sewersheds. The investment in GSI in these sewersheds shall be an average of 3 million dollars per fiscal year for the ten-year period ending 2019

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(for a total of \$30 million), and an average of 2 million dollars per year for the following 10 years (for a total of \$20 million). GSI implementation will be in accordance with the GSI Plan.

For the near-east side of the City, there has been another GSI program in the tributary area to Detroit River Outfalls 005 - 009, 011, and 012. Because of the potential for some larger-scale green projects due to a relatively large amount of vacant land in the area, it may be possible to eliminate or reduce the size of some previously envisioned CSO treatment facilities for this area using the combination of GSI implementation along with possible sewer separation, and other engineering solutions. With GSI implementation now spreading across the city, it is acceptable for the city to use one-third (1/3) of the total GSI expenditures on projects upstream of untreated CSOs other than Rouge River Outfalls 059-069, 072-075, 077, and 079.

#### c) Storm Water Control

- 1) On or before April 1, 2018, (submitted) the permittees shall submit to the Department for review and approval a storm water control requirement for areas of new development and/or redevelopment. This storm water control requirement is primarily a focus within the Rouge Sewer District and Central Sewer District, as it is these two Districts that have untreated CSOs. Therefore, the permittees shall propose a level of storm water control for new development and redevelopment in these two sewer districts, and for the circumstances stated above, that is designed to help further reduce the volume and frequency of untreated CSO discharges, and a procedure and schedule for implementing this control requirement.
- 2) Storm water runoff from new development and redevelopment that will be conveyed through storm sewers to DWSD's combined sewers will require control to help further reduce volume and frequency of untreated CSO discharges. These are projects that will require construction plan review by the permittees, and a Part 41 construction permit issued by the Department. Please note that in most cases, new combined sewers will no longer be permitted under Part 41 (except for combined sewer relocation projects). Note that this is not a requirement for storm sewers subject to Permit No. MISO40000 issued to the City of Detroit, as the storm sewers under MISO40000 discharge directly to surface waters and are not owned by the DWSD.

#### d) City Sewer Rehabilitation

DWSD is currently working on a more robust annual program to remove infiltration/inflow (I/I) from its combined collection system. It is the Department's understanding that this program has a budget of about \$20 million per year.

- g. Combined Sewer Overflow Control Program Schedule
  - 1) West-side Model; Rouge River Outfalls 059-069, Outfalls 072-075, Outfall 077, and Outfall 079. For untreated combined sewer overflows from Outfalls 059-069, Outfalls 072-075, Outfall 077, and Outfall 079, the permittees shall determine the accurate frequency and volume of untreated CSO discharges and amend the "Supplemental Report on Alternative CSO Controls for the Upper Rouge River," dated April 30, 2010 according to the following schedule:
    - a) The work plan has been approved by the Department that (1) sets forth the monitoring of the 17 CSOs that will be accomplished to accurately determine the frequency and volume of these untreated CSO discharges, (2) uses this monitoring along with the current Ovation monitoring as appropriate in a calibrated and verified model to accurately detail the volume and frequency of the 17 CSOs during a representative and typical 10-year period of rainfall record, and (3) to determine the peak hour flow at the 10 yr 1 hr event of each of the 17 CSOs. The permittees shall continue to implement the approved work plan.
    - b) On or before April 15, 2019, (submitted) the permittees shall submit a report to the Department for review and approval that summarizes the determination and provides the volume and frequency of these 17 CSOs over a representative and typical 10-year period of rainfall record and provides the peak hour flow at the 10 yr 1 hr event for each of these 17 CSOs;

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c) On or before November 15, 2022, the permittees shall submit an amendment for Department review and approval to the "Supplemental Report on Alternative CSO Controls for the Upper Rouge River" (dated April 30, 2010) that describes any changes to the recommended long-term CSO control projects for the 17 CSOs. This plan may propose an alternative to the use of 10 minutes of detention at the 10 year – 1 hour event, at the permittees' discretion;

- 2) Near eastside; <u>Detroit River Outfalls 005-009, 011, and 012</u>. The permittees shall develop a revised CSO Control Plan for this tributary area in accordance with the following schedule:
  - On or before November 15, 2022, the permittees shall submit to the Department for review and approval an update to their Long-term CSO Control program (Detroit update 2008) for providing elimination or adequate treatment of CSO Outfalls 005-009, Outfall 011, and Outfall 012 to meet water quality standards at times of discharge. This plan shall consider the GI recommendations and potential for storm water reduction from the completed 205(j) report for this area. This plan may propose an alternative control requirement for the Long-term CSO control program.
- 3) The permittees may choose to offer an entire updated Long-term CSO Control program for all Detroit River CSOs. This updated plan can include a totally revised Detroit update (2008) for all remaining CSOs. Note that CSOs can be prohibited, eliminated, or adequately treated to meet water quality standards at times of discharge. If the permittees decide to pursue this approach, then the revised plan is due on or before November 15, 2022, for Department review and approval.

Following implementation of any phase of any of the approved Control Programs contained in Part I.A.15.f. and g. of this permit, the Control Program(s) may be reevaluated by the permittees or the Department. Future permits may include requirements to conduct water quality evaluations designed to verify that the overall CSO control program is providing adequate treatment to meet water quality standards. This permit may be modified in accordance with applicable laws and rules, to incorporate revisions necessary to conform to pertinent rules or laws, or as necessary to address prevailing situations, such as technical or financial constraints.

h. Notification and Testing Requirements
The federal rule promulgated by the United States Environmental Protection Agency in 40 CFR Part 122
establishing the public notification requirements for CSO discharges to the Great Lakes basin took effect
February 7, 2018.

On or before <u>August 7, 2018,</u> (submitted) the permittees shall submit to the Department for approval, a public notification plan in accordance with 40 CFR 122.38(c). Additionally, on or before <u>April 4, 2022</u>, with the application for reissuance, the permittees shall submit to the Department for approval, an updated public notification plan.

Beginning November 7, 2018, all permittees authorized to discharge untreated or treated CSO to the Great Lakes Basin must provide public notification of CSO discharges in accordance with 40 CFR 122.38(a) and the approved public notification plan. The requirements include but are not limited to the following: notification of the local public health department, other potentially affected public entities and the public; and signage, where feasible at discharge points and other potentially impacted public access areas. In addition, in accordance with Section 324.3112a of the NREPA, the permittees shall provide notification to a newspaper of general circulation in the county in which the discharge occurred or is occurring. To the extent that a conflict may arise between Part I.A.15.h. and Part I.A.16., the Department approved Public Notification Plan shall govern.

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## 16. Untreated or Partially Treated Sewage Discharge Reporting and Testing Requirements

In accordance with Section 324.3112a of the NREPA, if untreated or partially treated sewage is directly or indirectly discharged from a sewer system onto land or into the waters of the state, the entity responsible for the sewer system shall immediately, but not more than 24 hours after the discharge begins, notify, by telephone, the Department, local health departments, a daily newspaper of general circulation in the county in which the permittees are located, and a daily newspaper of general circulation in the county or counties in which the municipalities whose waters may be affected by the discharge are located that the discharge is occurring.

The permittees shall also annually contact municipalities, including the superintendent of a public drinking water supply with potentially affected intakes, whose waters may be affected by the permittees' discharge of untreated or partially treated sewage, and, if those municipalities wish to be notified in the same manner as specified above, the permittees shall provide such notification. Such notification shall also include a daily newspaper in the county of the affected municipality.

At the conclusion of the discharge, written notification shall be submitted in accordance with and on the "Report of Discharge Form" available via the internet at: http://www.deq.state.mi.us/csosso/, or, alternatively for combined sewer overflow discharges, in accordance with notification procedures approved by the Department.

In addition, in accordance with Section 324.3112a of the NREPA, each time a discharge of untreated or partially treated sewage occurs, the permittees shall test the affected waters for Escherichia coli to assess the risk to the public health as a result of the discharge and shall provide the test results to the affected local county health departments and to the Department. The testing shall be done at locations specified by each affected local county health department but shall not exceed ten (10) tests for each separate discharge event. The affected local county health department may waive this testing requirement, if it determines that such testing is not needed to assess the risk to the public health as a result of the discharge event. The results of this testing shall be submitted with the written notification required above, or, if the results are not yet available, submitted as soon as they become available. This testing is not required, if the testing has been waived by the local health department, or if the discharge(s) did not affect surface waters.

Permittees accepting sanitary or municipal sewage from other sewage collection systems are encouraged to notify the owners of those systems of the above reporting and testing requirements.

# 17. Pollutant Minimization and Source Evaluation Program for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic Acid (PFOA)

The goal of the Pollutant Minimization and Source Evaluation Program is to identify and address sources of perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA) and to reduce and maintain the effluent concentrations of PFOS and/or PFOA at or below the water quality standards (WQS) and/or the Water Quality-Based Effluent limit (WQBEL). The WQS is 11 **ng/L** for PFOS and the WQBEL for PFOA is 8.04 **ug/l**.

On or before October 1, 2019, the permittee shall submit an approvable Pollutant Minimization and Source Evaluation Program for PFOS and/or PFOA to proceed toward the goal. The Pollutant Minimization and Source Evaluation Program shall continue work under the IPP Interim Initiative and shall include the following at a minimum:

- a. Identification of and strategies to identify any additional potential and probable PFOS and/or PFOA sources
- b. Monitoring plan for the permitted facility's influent and effluent and effluent from potential sources
- c. Implemented measures thus far to eliminate, reduce, and/or control sources, and an assessment of the degree of success and the strategies used to measure success
- d. Proposed measures and implementation schedules for elimination, control, and/or reduction of the identified sources (prioritizing highest loadings and concentrations), and the strategies that will be used to measure success

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The Pollutant Minimization and Source Evaluation Program shall be implemented upon approval by the Department.

On or before May 1 of each year following Pollutant Minimization and Source Evaluation Program implementation, the permittee shall submit to the Department a status report for the previous calendar year. Upon written notification by the Department, the permittee may be required to submit more frequent status reports. Status reports at a minimum shall include:

- a. Complete listing of PFOS and/or PFOA sources
- b. Summary of influent and effluent monitoring data
- c. Summary of monitoring data from known or potential sources
- d. History and compliance status for sources
- e. Implemented measures to eliminate, reduce, or control sources, (prioritizing highest loadings and concentrations), and an assessment of the degree of success and the strategies used to measure success
- f. Proposed measures and schedules for elimination, control, or reduction of any newly identified PFOS and/or PFOA sources (prioritizing highest loadings and concentrations), and the strategies that will be used to measure success
- g. Barriers to implementation and revisions to the implementation schedule
- h. Laboratory reports, if not previously supplied

Any information generated as a result of the Pollutant Minimization and Source Evaluation Program set forth in this permit may be used to support a request to modify the Pollutant Minimization and Source Evaluation Program or to demonstrate that the requirement has been completed satisfactorily.

A request for modification of the approved Pollutant Minimization and Source Evaluation Program shall be submitted in writing to the Department along with supporting documentation for review and approval. The Department may approve modifications to the approved Pollutant Minimization and Source Evaluation Program, including a reduction in the frequency of the influent and known or potential source monitoring requirements. Approval of a Pollutant Minimization and Source Evaluation Program modification does not require a permit modification.

This permit may be modified in accordance with applicable laws and rules to include additional PFOS and/or PFOA conditions and/or limitations as necessary.

## 18. Collection System Contingency Plan

An emergency condition at the WRRF might occur that requires reduced (or even no) influent flows to the WRRF. Under Rule 299.2959 of Part 41, the permittee is required to minimize discharge of excessive pollutants. On or before July 1, 2020, the permittee shall submit to the Department for review and approval, a report that documents how the collection system and WRRF would be operated if an emergency condition required reduced influent flow (or no flow) to the WRRF to minimize discharge of excessive pollutants per Rule 299.2959 of Part 41 of PA 451. This could involve in-system storage of flows, use of Retention Treatment Basins for storage and potentially treated discharge, rerouting of flow, use of portions of the WRRF as appropriate, etc. The report shall evaluate operation of the collection system and WRRF, considering at least two hypothetical conditions with no influent flow to the WRRF; a duration of six (6) hours of no influent flow, and a duration of 24 hours of no influent flow.

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## 19. Facility Contact

The "Facility Contact" was specified in the application. The permittees may replace the facility contact at any time, and shall notify the Department in writing <u>within 10 days</u> after replacement (including the name, address and telephone number of the new facility contact).

- a. The facility contact shall be (or a duly authorized representative of this person):
  - for a corporation, a principal executive officer of at least the level of vice president; or a designated representative if the representative is responsible for the overall operation of the facility from which the discharge originates, as described in the permit application or other NPDES form,
  - for a partnership, a general partner,
  - for a sole proprietorship, the proprietor, or
  - for a municipal, state, or other public facility, either a principal executive officer, the mayor, village president, city or village manager or other duly authorized employee.
- b. A person is a duly authorized representative only if:
  - the authorization is made in writing to the Department by a person described in paragraph a. of this section; and
  - the authorization specifies either an individual or a position having responsibility for the overall
    operation of the regulated facility or activity such as the position of plant manager, operator of a well
    or a well field, superintendent, position of equivalent responsibility, or an individual or position
    having overall responsibility for environmental matters for the facility (a duly authorized
    representative may thus be either a named individual or any individual occupying a named position).

Nothing in this section obviates the permittees from properly submitting reports and forms as required by law.

## 20. Monthly Operating Reports

Part 41 of Act 451 of 1994 as amended, specifically Section 324.4106 and associated R 299.2953, requires that the permittees file with the Department, on forms prescribed by the Department, operating reports showing the effectiveness of the treatment facility operation and the quantity and quality of liquid wastes discharged into waters of the state.

Within thirty (30) days of the effective date of this permit, the permittees shall submit to the Department a revised treatment facility monitoring program to address monitoring requirement changes reflected in this permit, or submit justification explaining why monitoring requirement changes reflected in this permit do not necessitate revisions to the treatment facility monitoring program. The permittees shall implement the revised treatment facility monitoring program upon approval from the Department. Applicable forms and guidance are available on the Department's web site at http://www.michigan.gov/deq/0,1607,7-135-3313\_44117---,00.html. The permittees may use alternate forms if they are consistent with the approved treatment facility monitoring program. Unless the Department provides written notification to the permittees that monthly submittal of operating reports is required, operating reports that result from implementation of the approved treatment facility monitoring program shall be maintained on site for a minimum of three (3) years and shall be made available to the Department for review upon request.

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## 21. Discharge Monitoring Report – Quality Assurance Study Program

The permittees shall participate in the Discharge Monitoring Report – Quality Assurance (DMR-QA) Study Program. The purpose of the DMR-QA Study Program is to annually evaluate the proficiency of all in-house and/or contract laboratory(ies) that perform, on behalf of the facility authorized to discharge under this permit, the analytical testing required under this permit. In accordance with Section 308 of the Clean Water Act (33 U.S.C. § 1318); and R 323.2138 and R 323.2154 of Part 21, Wastewater Discharge Permits, promulgated under Part 31 of the NREPA, participation in the DMR-QA Study Program is required for all major facilities, and for minor facilities selected for participation by the Department.

Annually and in accordance with DMR-QA Study Program requirements and submittal due dates, the permittees shall submit to the Michigan DMR-QA Study Program state coordinator all documentation required by the DMR-QA Study. DMR-QA Study Program participation is required only for the analytes required under this permit and only when those analytes are also identified in the DMR-QA Study.

If the permitted facility's status as a major facility should change, participation in the DMR-QA Study Program may be reevaluated. Questions concerning participation in the DMR-QA Study Program should be directed to the Michigan DMR-QA Study Program state coordinator.

All forms and instructions required for participation in the DMR-QA Study Program, including submittal due dates and state coordinator contact information, can be found at <a href="http://www.epa.gov/compliance/discharge-monitoring-report-quality-assurance-study-program">http://www.epa.gov/compliance/discharge-monitoring-report-quality-assurance-study-program</a>.

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## **Section B. Storm Water Pollution Prevention**

This section is not required.

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#### **PARTI**

## Section C. Industrial Waste Pretreatment Program

## 1. Federal Industrial Pretreatment Program

- a. The permittees shall implement the Federal Industrial Pretreatment Program approved on June 26, 1997, and any subsequent modifications approved up to the issuance of this permit. Approval of substantial program modifications after the issuance of this permit shall be incorporated into this permit by minor modification in accordance with 40 CFR 122.63.
- b. The permittees shall comply with R 323.2301 through R 323.2317 of the Michigan Administrative Code (Part 23 Rules), the General Pretreatment Regulations for Existing and New Sources of Pollution (40 CFR Part 403), and the approved Federal Industrial Pretreatment Program.
- c. The permittees shall have the legal authority and necessary interjurisdictional agreements that provide the basis for the implementation and enforcement of the approved Federal Industrial Pretreatment Program throughout the service area. The legal authority and necessary interjurisdictional agreements shall include, at a minimum, the authority to carry out the activities specified in R 323.2306(a).
- d. The permittees shall develop procedures which describe, in sufficient detail, program commitments which enable implementation of the approved Federal Industrial Pretreatment Program, 40 CFR Part 403, and the Part 23 Rules in accordance with R 323.2306(c).
- e. The permittees shall establish an interjurisdictional agreement (or comparable document) with all tributary governmental jurisdictions. Each interjurisdictional agreement shall contain, at a minimum, the following:
  - 1) identification of the agency responsible for the implementation and enforcement of the approved Federal Industrial Pretreatment Program within the tributary governmental jurisdiction's boundaries; and
  - 2) the provision of the legal authority which provides the basis for the implementation and enforcement of the approved Federal Industrial Pretreatment Program within the tributary governmental jurisdiction's boundaries.
- f. The permittees shall prohibit discharges that:
  - 1) cause, in whole or in part, the permittees, failure to comply with any condition of this permit or the NREPA;
  - 2) restrict, in whole or in part, the permittee's management of biosolids;
  - 3) cause, in whole or in part, operational problems at the treatment facility or in its collection system;
  - 4) violate any of the general or specific prohibitions identified in R 323.2303(1) and (2);
  - 5) violate categorical standards identified in R 323.2311; and
  - 6) violate local limits established in accordance with R 323.2303(4).
- g. The permittees shall maintain a list of its nondomestic users that meet the criteria of a significant industrial user as identified in R 323.2302(cc).
- h. The permittees shall develop an enforcement response plan which describes, in sufficient detail, program commitments which will enable the enforcement of the approved Federal Industrial Pretreatment Program, 40 CFR Part 403, and the Part 23 Rules in accordance with R 323.2306(g).

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i. The Department may require modifications to the approved Federal Industrial Pretreatment Program which are necessary to ensure compliance with 40 CFR Part 403 and the Part 23 Rules in accordance with R 323.2309.

- j. The permittees shall not implement changes or modifications to the approved Federal Industrial Pretreatment Program without notification to the Department. Any substantial modification shall be subject to Department public noticing and approval in accordance with R 323.2309.
- k. The permittees shall maintain an adequate revenue structure and staffing level for effective implementation of the approved Federal Industrial Pretreatment Program.
- I. The permittees shall develop and maintain, for a minimum of three (3) years, all records and information necessary to determine nondomestic user compliance with 40 CFR Part 403, Part 23 Rules and the approved Federal Industrial Pretreatment Program. This period of retention shall be extended during the course of any unresolved enforcement action or litigation regarding a nondomestic user or when requested by the Department or the United States Environmental Protection Agency. All of the aforementioned records and information shall be made available upon request for inspection and copying by the Department and the United States Environmental Protection Agency.
- m. The permittees shall evaluate the approved Federal Industrial Pretreatment Program for compliance with the 40 CFR Part 403, Part 23 Rules and the prohibitions stated in item f. (above). Based upon this evaluation, the permittees shall propose to the Department all necessary changes or modifications to the approved Federal Industrial Pretreatment Program no later than the next Industrial Pretreatment Program Annual Report due date (see item o. below).
- n. The permittees shall develop and enforce local limits to implement the prohibitions listed in item f above. Local limits shall be based upon data representative of actual conditions demonstrated in a maximum allowable headworks loading analysis. An evaluation of whether the existing local limits need to be revised shall be submitted to the Department by <u>June 1, 2021</u>. The submittal shall provide a technical evaluation of the basis upon which this determination was made which includes information regarding the maximum allowable headworks loading, collection system protection criteria, and worker health and safety, based upon data collected since the last local limits review.

The following pollutants shall be evaluated:

- 1) Arsenic, Cadmium, Chromium, Copper, Cyanide, Lead, Mercury, Nickel, Silver, and Zinc;
- 2) Pollutants that are subject to limits or monitoring in this permit;
- 3) Pollutants that have an existing local limit; and,
- 4) Other pollutants of concern which would reasonably be expected to be discharged or transported by truck or rail or otherwise introduced into the POTW.
- o. On or before April 1 of each year, the permittees shall submit to the Department, as required by R 323.2310(8), an Industrial Pretreatment Program Annual Report on the status of program implementation and enforcement activities. The reporting period shall begin on January 1 and end on December 31. At a minimum, the Industrial Pretreatment Program Annual Report shall include:
  - 1) the Pretreatment Program Report data identified in Appendix A to 40 CFR part 127 NPDES Electronic Reporting;
  - 2) a summary of changes to the approved IPP that have not been previously reported to the Department;

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a summary of results of all the sampling and analyses performed of the WRRF's influent, effluent, and biosolids conducted in accordance with approved methods during the reporting period. The summary shall include the monthly average, daily maximum, quantification level, and number of samples analyzed for each pollutant. At a minimum, the results of analyses for all locally limited parameters for at least one monitoring event that tests influent, effluent and biosolids during the reporting period shall be submitted with each report, unless otherwise required by the Department. Sample collection shall be at intervals sufficient to provide pollutant removal rates, unless the pollutant is not measurable; and;

- 4) any other relevant information requested by the Department.
- p, The permittee is required under this permit and R 323.2303(4) of the Michigan Administrative Code to review and update their local limits when:
  - 1) New pollutants are introduced.
  - 2) New pollutants that were previously unevaluated are identified
  - 3) New water quality or biosolids standards are established or additional information becomes available about the nature of pollutants, such as removal rates and accumulation in biosolids. Substantial increases of pollutants are proposed as required in the notification of new or increased uses in accordance with the provisions of 40 CFR 122.42.

## 2. Schedule for Notification to Contributing Jurisdictions

On or before May 1st and November 1st of each year, the permittees shall submit to the Department a report demonstrating the efforts and progress toward achieving the requirement of having all contributing jurisdictions adopt a legal authority that is equivalent to or more restrictive than the permittees', including the revised local limits to be incorporated by the permittees as result of the requirements of Part I.C.2. of this permit. This legal authority includes the provisions of Ordinance 08-05 (Detroit City Code Chapter 56, Article III. Division 3) and subsequent revisions to the local limits. These progress reports shall be submitted every six months until the requirement is achieved. The biannual progress reports shall contain:

- a. a listing of all contributing jurisdictions,
- b. the status of each contributing jurisdiction's adoption of adequate legal authority, and
- for contributing jurisdictions who have not yet adopted adequate legal authority, a description of the steps/actions the permittees have taken to assure progress toward the contributing jurisdiction's adoption of adequate legal authority.

The permittees shall, to the best of its ability, work with those contributing jurisdictions who did not adopt adequate legal authority by January 1, 2008, to obtain such legal authority.

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#### **PARTI**

## Section D. Residuals Management Program

## 1. Residuals Management Program for Land Application of Biosolids

The permittees are authorized to land-apply bulk biosolids or prepare bulk biosolids for land application in accordance with the permittees' approved Residuals Management Program (RMP) approved on April 22, 2008, and approved modifications thereto, in accordance with the requirements established in R 323.2401 through R 323.2418 of the Michigan Administrative Code (Part 24 Rules). The approved RMP, and any approved modifications thereto, are enforceable requirements of this permit. Incineration, landfilling and other residual disposal activities shall be conducted in accordance with Part II.D.7. of this permit. The Part 24 Rules can be obtained via the internet (http://www.michigan.gov/deq/ and on the left side of the screen click on Water, Biosolids & Industrial Pretreatment, Biosolids then click on Biosolids Laws and Rules Information which is under the Laws & Rules banner in the center of the screen).

#### a. Annual Report

On or before October 30 of each year, the permittees shall submit an annual report to the Department for the previous fiscal year of October 1 through September 30. The report shall be submitted electronically via the Department's MiWaters system at https://miwaters.deq.state.mi.us. At a minimum, the report shall contain:

- 1) a certification that current residuals management practices are in accordance with the approved RMP, or a proposal for modification to the approved RMP; and
- 2) a completed Biosolids Annual Report Form, available at https://miwaters.deq.state.mi.us.
- b. Modifications to the Approved RMP

Prior to implementation of modifications to the RMP, the permittees shall submit proposed modifications to the Department for approval. The approved modification shall become effective upon the date of approval. Upon written notification, the Department may impose additional requirements and/or limitations to the approved RMP as necessary to protect public health and the environment from any adverse effect of a pollutant in the biosolids.

#### c. Record Keeping

Records required by the Part 24 Rules shall be kept for a minimum of five years. However, the records documenting cumulative loading for sites subject to cumulative pollutant loading rates shall be kept as long as the site receives biosolids.

#### d. Contact Information

RMP related submittals to the Department shall be to the Southeast Michigan District Supervisor of the Water Resources Division. The Southeast Michigan District Office is located at 27700 Donald Court, Warren Michigan, 48092-2793, Telephone: 586-753-3750, Fax: 586-753-3751.

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#### PART II

Part II may include terms and /or conditions not applicable to discharges covered under this permit.

#### Section A. Definitions

**Acute toxic unit (TU<sub>A</sub>)** means  $100/LC_{50}$  where the  $LC_{50}$  is determined from a whole effluent toxicity (WET) test which produces a result that is statistically or graphically estimated to be lethal to 50% of the test organisms.

**Annual monitoring frequency** refers to a calendar year beginning on January 1 and ending on December 31. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

**Authorized public agency** means a state, local, or county agency that is designated pursuant to the provisions of section 9110 of Part 91 of the NREPA to implement soil erosion and sedimentation control requirements with regard to construction activities undertaken by that agency.

**Best management practices (BMPs)** means structural devices or nonstructural practices that are designed to prevent pollutants from entering into storm water, to direct the flow of storm water, or to treat polluted storm water.

**Bioaccumulative chemical of concern (BCC)** means a chemical which, upon entering the surface waters, by itself or as its toxic transformation product, accumulates in aquatic organisms by a human health bioaccumulation factor of more than 1000 after considering metabolism and other physiochemical properties that might enhance or inhibit bioaccumulation. The human health bioaccumulation factor shall be derived according to R 323.1057(5). Chemicals with half-lives of less than 8 weeks in the water column, sediment, and biota are not BCCs. The minimum bioaccumulation concentration factor (BAF) information needed to define an organic chemical as a BCC is either a field-measured BAF or a BAF derived using the biota-sediment accumulation factor (BSAF) methodology. The minimum BAF information needed to define an inorganic chemical as a BCC, including an organometal, is either a field-measured BAF or a laboratory-measured bioconcentration factor (BCF). The BCCs to which these rules apply are identified in Table 5 of R 323.1057 of the Water Quality Standards.

**Biosolids** are the solid, semisolid, or liquid residues generated during the treatment of sanitary sewage or domestic sewage in a treatment works. This includes, but is not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment processes and a derivative of the removed scum or solids.

**Bulk biosolids** means biosolids that are not sold or given away in a bag or other container for application to a lawn or home garden.

**Certificate of Coverage (COC)** is a document, issued by the Department, which authorizes a discharge under a general permit.

**Chronic toxic unit (TU<sub>c</sub>)** means 100/MATC or 100/IC<sub>25</sub>, where the maximum acceptable toxicant concentration (MATC) and IC<sub>25</sub> are expressed as a percent effluent in the test medium.

**Class B biosolids** refers to material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PSRP) in accordance with the Part 24 Rules. Processes include aerobic digestion, composting, anaerobic digestion, lime stabilization and air drying.

Combined sewer system is a sewer system in which storm water runoff is combined with sanitary wastes.

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**Daily concentration** is the sum of the concentrations of the individual samples of a parameter divided by the number of samples taken during any calendar day. If the parameter concentration in any sample is less than the quantification limit, regard that value as zero when calculating the daily concentration. The daily concentration will be used to determine compliance with any maximum and minimum daily concentration limitations (except for pH and dissolved oxygen). When required by the permit, report the maximum calculated daily concentration for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the Discharge Monitoring Reports (DMRs).

For pH, report the maximum value of any *individual* sample taken during the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs and the minimum value of any *individual* sample taken during the month in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs. For dissolved oxygen, report the minimum concentration of any *individual* sample in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs.

**Daily loading** is the total discharge by weight of a parameter discharged during any calendar day. This value is calculated by multiplying the daily concentration by the total daily flow and by the appropriate conversion factor. The daily loading will be used to determine compliance with any maximum daily loading limitations. When required by the permit, report the maximum calculated daily loading for the month in the "MAXIMUM" column under "QUANTITY OR LOADING" on the DMRs.

**Daily monitoring frequency** refers to a 24-hour day. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

**Department** means the Michigan Department of Environment, Great Lakes, and Energy.

**Detection level** means the lowest concentration or amount of the target analyte that can be determined to be different from zero by a single measurement at a stated level of probability.

**Discharge** means the addition of any waste, waste effluent, wastewater, pollutant, or any combination thereof to any surface water of the state.

**EC**<sub>50</sub> means a statistically or graphically estimated concentration that is expected to cause 1 or more specified effects in 50% of a group of organisms under specified conditions.

#### Fecal coliform bacteria monthly

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – Fecal coliform bacteria monthly is the geometric mean of all daily concentrations determined during a discharge event. Days on which no daily concentration is determined shall not be used to determine the calculated monthly value. The calculated monthly value will be used to determine compliance with the maximum monthly fecal coliform bacteria limitations. When required by the permit, report the calculated monthly value in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMR. If the period in which the discharge event occurred was partially in each of two months, the calculated monthly value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – Fecal coliform bacteria monthly is the geometric mean of all daily concentrations determined during a reporting month. Days on which no daily concentration is determined shall not be used to determine the calculated monthly value. The calculated monthly value will be used to determine compliance with the maximum monthly fecal coliform bacteria limitations. When required by the permit, report the calculated monthly value in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMR.

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#### Fecal coliform bacteria 7-day

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – Fecal coliform bacteria 7-day is the geometric mean of the daily concentrations determined during any 7 consecutive days of discharge during a discharge event. If the number of daily concentrations determined during the discharge event is less than 7 days, the number of actual daily concentrations determined shall be used for the calculation. Days on which no daily concentration is determined shall not be used to determine the value. The calculated 7-day value will be used to determine compliance with the maximum 7-day fecal coliform bacteria limitations. When required by the permit, report the maximum calculated 7-day geometric mean value for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs. If the 7-day period was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – Fecal coliform bacteria 7-day is the geometric mean of the daily concentrations determined during any 7 consecutive days in a reporting month. If the number of daily concentrations determined is less than 7, the actual number of daily concentrations determined shall be used for the calculation. Days on which no daily concentration is determined shall not be used to determine the value. The calculated 7-day value will be used to determine compliance with the maximum 7-day fecal coliform bacteria limitations. When required by the permit, report the maximum calculated 7-day geometric mean for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs. The first calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

Flow-proportioned sample is a composite sample with the sample volume proportional to the effluent flow.

**General permit** means a National Pollutant Discharge Elimination System permit issued authorizing a category of similar discharges.

**Geometric mean** is the average of the logarithmic values of a base 10 data set, converted back to a base 10 number.

**Grab sample** is a single sample taken at neither a set time nor flow.

IC<sub>25</sub> means the toxicant concentration that would cause a 25% reduction in a nonquantal biological measurement for the test population.

**Illicit connection** means a physical connection to a municipal separate storm sewer system that primarily conveys non-storm water discharges other than uncontaminated groundwater into the storm sewer; or a physical connection not authorized or permitted by the local authority, where a local authority requires authorization or a permit for physical connections.

**Illicit discharge** means any discharge to, or seepage into, a municipal separate storm sewer system that is not composed entirely of storm water or uncontaminated groundwater. Illicit discharges include non-storm water discharges through pipes or other physical connections; dumping of motor vehicle fluids, household hazardous wastes, domestic animal wastes, or litter; collection and intentional dumping of grass clippings or leaf litter; or unauthorized discharges of sewage, industrial waste, restaurant wastes, or any other non-storm water waste directly into a separate storm sewer.

Individual permit means a site-specific NPDES permit.

**Inlet** means a catch basin, roof drain, conduit, drain tile, retention pond riser pipe, sump pump, or other point where storm water or wastewater enters into a closed conveyance system prior to discharge off site or into waters of the state.

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**Interference** is a discharge which, alone or in conjunction with a discharge or discharges from other sources, both: 1) inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and 2) therefore, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or, of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent state or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including state regulations contained in any state sludge management plan prepared pursuant to Subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act. [This definition does not apply to sample matrix interference].

**Land application** means spraying or spreading biosolids or a biosolids derivative onto the land surface, injecting below the land surface, or incorporating into the soil so that the biosolids or biosolids derivative can either condition the soil or fertilize crops or vegetation grown in the soil.

**LC**<sub>50</sub> means a statistically or graphically estimated concentration that is expected to be lethal to 50% of a group of organisms under specified conditions.

**Maximum acceptable toxicant concentration (MATC)** means the concentration obtained by calculating the geometric mean of the lower and upper chronic limits from a chronic test. A lower chronic limit is the highest tested concentration that did not cause the occurrence of a specific adverse effect. An upper chronic limit is the lowest tested concentration which did cause the occurrence of a specific adverse effect and above which all tested concentrations caused such an occurrence.

**Maximum extent practicable** means implementation of best management practices by a public body to comply with an approved storm water management program as required by a national permit for a municipal separate storm sewer system, in a manner that is environmentally beneficial, technically feasible, and within the public body's legal authority.

MGD means million gallons per day.

**Monthly concentration** is the sum of the daily concentrations determined during a reporting period divided by the number of daily concentrations determined. The calculated monthly concentration will be used to determine compliance with any maximum monthly concentration limitations. Days with no discharge shall not be used to determine the value. When required by the permit, report the calculated monthly concentration in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMR.

For minimum percent removal requirements, the monthly influent concentration and the monthly effluent concentration shall be determined. The calculated monthly percent removal, which is equal to 100 times the quantity [1 minus the quantity (monthly effluent concentration divided by the monthly influent concentration)], shall be reported in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs.

**Monthly loading** is the sum of the daily loadings of a parameter divided by the number of daily loadings determined during a reporting period. The calculated monthly loading will be used to determine compliance with any maximum monthly loading limitations. Days with no discharge shall not be used to determine the value. When required by the permit, report the calculated monthly loading in the "AVERAGE" column under "QUANTITY OR LOADING" on the DMR.

**Monthly monitoring frequency** refers to a calendar month. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

**Municipal separate storm sewer** means a conveyance or system of conveyances designed or used for collecting or conveying storm water which is not a combined sewer and which is not part of a publicly-owned treatment works as defined in the Code of Federal Regulations at 40 CFR 122.2.

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**Municipal separate storm sewer system (MS4)** means all separate storm sewers that are owned or operated by the United States, a state, city, village, township, county, district, association, or other public body created by or pursuant to state law, having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under state law, such as a sewer district, flood control district, or drainage district, or similar entity, or a designated or approved management agency under Section 208 of the Federal Act that discharges to the waters of the state. This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

**National Pretreatment Standards** are the regulations promulgated by or to be promulgated by the Federal Environmental Protection Agency pursuant to Section 307(b) and (c) of the Federal Act. The standards establish nationwide limits for specific industrial categories for discharge to a POTW.

**No observed adverse effect level (NOAEL)** means the highest tested dose or concentration of a substance which results in no observed adverse effect in exposed test organisms where higher doses or concentrations result in an adverse effect.

**Noncontact cooling water** is water used for cooling which does not come into direct contact with any raw material, intermediate product, by-product, waste product or finished product.

**Nondomestic user** is any discharger to a POTW that discharges wastes other than or in addition to water-carried wastes from toilet, kitchen, laundry, bathing or other facilities used for household purposes.

**Outfall** is the location at which a point source discharge enters the surface waters of the state.

**Part 91 agency** means an agency that is designated by a county board of commissioners pursuant to the provisions of section 9105 of Part 91 of the NREPA; an agency that is designated by a city, village, or township in accordance with the provisions of section 9106 of Part 91 of the NREPA; or the Department for soil erosion and sedimentation activities under Part 615, Part 631, or Part 632 pursuant to the provisions of section 9115 of Part 91 of the NREPA.

**Part 91 permit** means a soil erosion and sedimentation control permit issued by a Part 91 agency pursuant to the provisions of Part 91 of the NREPA.

**Partially treated sewage** is any sewage, sewage and storm water, or sewage and wastewater, from domestic or industrial sources that is treated to a level less than that required by the permittees' National Pollutant Discharge Elimination System permit, or that is not treated to national secondary treatment standards for wastewater, including discharges to surface waters from retention treatment facilities.

**Point of discharge** is the location of a point source discharge where storm water is discharged directly into a separate storm sewer system.

**Point source discharge** means a discharge from any discernible, confined, discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, or rolling stock. Changing the surface of land or establishing grading patterns on land will result in a point source discharge where the runoff from the site is ultimately discharged to waters of the state.

**Polluting material** means any material, in solid or liquid form, identified as a polluting material under the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code).

**POTW** is a publicly owned treatment work.

**Pretreatment** is reducing the amount of pollutants, eliminating pollutants, or altering the nature of pollutant properties to a less harmful state prior to discharge into a public sewer. The reduction or alteration can be by physical, chemical, or biological processes, process changes, or by other means. Dilution is not considered pretreatment unless expressly authorized by an applicable National Pretreatment Standard for a particular industrial category.

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**Public** (as used in the MS4 individual permit) means all persons who potentially could affect the authorized storm water discharges, including, but not limited to, residents, visitors to the area, public employees, businesses, industries, and construction contractors and developers.

**Public body** means the United States; the state of Michigan; a city, village, township, county, school district, public college or university, or single-purpose governmental agency; or any other body which is created by federal or state statute or law.

**Qualified Personnel** means an individual who meets qualifications acceptable to the Department and who is authorized by an Industrial Storm Water Certified Operator to collect the storm water sample.

**Qualifying storm event** means a storm event causing greater than 0.1 inch of rainfall and occurring at least 72 hours after the previous measurable storm event that also caused greater than 0.1 inch of rainfall. Upon request, the Department may approve an alternate definition meeting the condition of a qualifying storm event.

**Quantification level** means the measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calculated at a specified concentration above the detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant.

**Quarterly monitoring frequency** refers to a three month period, defined as January through March, April through June, July through September, and October through December. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

**Regional Administrator** is the Region 5 Administrator, U.S. EPA, located at R-19J, 77 W. Jackson Blvd., Chicago, Illinois 60604.

**Regulated area** means the permittee's urbanized area, where urbanized area is defined as a place and its adjacent densely-populated territory that together have a minimum population of 50,000 people as defined by the United States Bureau of the Census and as determined by the latest available decennial census.

**Secondary containment structure** means a unit, other than the primary container, in which significant materials are packaged or held, which is required by State or Federal law to prevent the escape of significant materials by gravity into sewers, drains, or otherwise directly or indirectly into any sewer system or to the surface or ground waters of this state.

**Separate storm sewer system** means a system of drainage, including, but not limited to, roads, catch basins, curbs, gutters, parking lots, ditches, conduits, pumping devices, or man-made channels, which is not a combined sewer where storm water mixes with sanitary wastes, and is not part of a POTW.

**Significant industrial user** is a nondomestic user that: 1) is subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N; or 2) discharges an average of 25,000 gallons per day or more of process wastewater to a POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process waste stream which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the permittees as defined in 40 CFR 403.12(a) on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's treatment plant operation or violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

Significant materials Significant Materials means any material which could degrade or impair water quality, including but not limited to: raw materials; fuels; solvents, detergents, and plastic pellets; finished materials such as metallic products; hazardous substances designated under Section 101(14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (see 40 CFR 372.65); any chemical the facility is required to report pursuant to Section 313 of Emergency Planning and Community Right-to-Know Act (EPCRA); polluting materials as identified under the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code); Hazardous Wastes as defined in Part 111 of the NREPA; fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

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**Significant spills and significant leaks** means any release of a polluting material reportable under the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code).

**Special-use** area means secondary containment structures required by state or federal law; lands on Michigan's List of Sites of Environmental Contamination pursuant to Part 201, Environmental Remediation, of the NREPA; and/or areas with other activities that may contribute pollutants to the storm water for which the Department determines monitoring is needed.

**Stoichiometric** means the quantity of a reagent calculated to be necessary and sufficient for a given chemical reaction.

**Storm water** means storm water runoff, snow melt runoff, surface runoff and drainage, and non-storm water included under the conditions of this permit.

**Storm water discharge point** is the location where the point source discharge of storm water is directed to surface waters of the state or to a separate storm sewer. It includes the location of all point source discharges where storm water exits the facility, including *outfalls* which discharge directly to surface waters of the state, and *points of discharge* which discharge directly into separate storm sewer systems.

**SWPPP** means the Storm Water Pollution Prevention Plan prepared in accordance with this permit.

**Tier I value** means a value for aquatic life, human health or wildlife calculated under R 323.1057 of the Water Quality Standards using a tier I toxicity database.

**Tier II value** means a value for aquatic life, human health or wildlife calculated under R 323.1057 of the Water Quality Standards using a tier II toxicity database.

**Total maximum daily loads (TMDLs)** are required by the Federal Act for waterbodies that do not meet water quality standards. TMDLs represent the maximum daily load of a pollutant that a waterbody can assimilate and meet water quality standards, and an allocation of that load among point sources, nonpoint sources, and a margin of safety.

**Toxicity reduction evaluation (TRE)** means a site-specific study conducted in a stepwise process designed to identify the causative agents of effluent toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity.

**Water Quality Standards** means the Part 4 Water Quality Standards promulgated pursuant to Part 31 of the NREPA, being R 323.1041 through R 323.1117 of the Michigan Administrative Code.

**Weekly monitoring frequency** refers to a calendar week which begins on Sunday and ends on Saturday. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

**Wet Weather Flow** is the wastewater flow (domestic, industrial, commercial and institutional) including infiltration and inflow that occurs as the result of a precipitation or snowmelt event.

**Wet Weather Event**, for the interim period, is defined as those days on which an average 0.10 inches or more of precipitation was recorded by six strategically located rainfall gauges (as defined in Part I.9.c.(10) of the Operational Plan) in the WRRF's service area, plus two days immediately following days of 0.10 inch to 1.00 inch days of precipitation or three days following days of 1.00 inch or more precipitation. Rainfall days are further limited to those days in which the air temperature exceeds 32° F (0° C) for at least an eight hour period. The permittee may demonstrate that certain events such as snowmelt, and other unforeseen events will be considered rainfall days.

The above definition of wet weather event is not adequate on a long term basis, or for the purposes of planning, designing, or implementing the combined sewer overflow improvements required in this permit. For purposes of planning and designing future CSO improvements, the permittee shall consider the effect of dewatering tributary storage basins on overall system recovery, both at the WRRF and CSO overflow points in the collection system.

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For this permit while the Regional Operational Plan is being revised, if up to 930 MGD (including recycle) is being processed with secondary treatment at the WRRF and no primary flow is being discharged, then tributary combined or sanitary storage basins in the GLWA system may be dewatered. Such dewatering will not be considered a violation of this permit, even if contrary to the above Wet Weather Event definition. Once a revised Regional Operation Plan is developed, it shall be implemented once reviewed and approved by the Department.

Upon approval of the Department, an alternate "wet weather event" definition may be used.

WWSL is a wastewater stabilization lagoon.

**WWSL** discharge event is a discrete occurrence during which effluent is discharged to the surface water up to 10 days of a consecutive 14 day period.

**3-portion composite sample** is a sample consisting of three equal-volume grab samples collected at equal intervals over an 8-hour period.

#### 7-day concentration

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – The 7-day concentration is the sum of the daily concentrations determined during any 7 consecutive days of discharge during a WWSL discharge event divided by the number of daily concentrations determined. If the number of daily concentrations determined during the WWSL discharge event is less than 7 days, the number of actual daily concentrations determined shall be used for the calculation. The calculated 7-day concentration will be used to determine compliance with any maximum 7-day concentration limitations. When required by the permit, report the maximum calculated 7-day concentration for the WWSL discharge event in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMR. If the WWSL discharge event was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – The 7-day concentration is the sum of the daily concentrations determined during any 7 consecutive days in a reporting month divided by the number of daily concentrations determined. If the number of daily concentrations determined is less than 7, the actual number of daily concentrations determined shall be used for the calculation. The calculated 7-day concentration will be used to determine compliance with any maximum 7-day concentration limitations in the reporting month. When required by the permit, report the maximum calculated 7-day concentration for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMR. The first 7-day calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

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#### 7-day loading

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – The 7-day loading is the sum of the daily loadings determined during any 7 consecutive days of discharge during a WWSL discharge event divided by the number of daily loadings determined. If the number of daily loadings determined during the WWSL discharge event is less than 7 days, the number of actual daily loadings determined shall be used for the calculation. The calculated 7-day loading will be used to determine compliance with any maximum 7-day loading limitations. When required by the permit, report the maximum calculated 7-day loading for the WWSL discharge event in the "MAXIMUM" column under "QUANTITY OR LOADING" on the DMR. If the WWSL discharge event was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred

FOR ALL OTHER DISCHARGES – The 7-day loading is the sum of the daily loadings determined during any 7 consecutive days in a reporting month divided by the number of daily loadings determined. If the number of daily loadings determined is less than 7, the actual number of daily loadings determined shall be used for the calculation. The calculated 7-day loading will be used to determine compliance with any maximum 7-day loading limitations in the reporting month. When required by the permit, report the maximum calculated 7-day loading for the month in the "MAXIMUM" column under "QUANTITY OR LOADING" on the DMR. The first 7-day calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

**24-hour composite sample** is a flow-proportioned composite sample consisting of hourly or more frequent portions that are taken over a 24-hour period. In accordance with the Department Approved Wet Weather Operational Plan (See Part I.A.11.), alternate requirements for 24-hour composite sampling may be utilized to satisfy the monitoring requirements of this permit.

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#### PART II

## **Section B. Monitoring Procedures**

## 1. Representative Samples

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

#### 2. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations promulgated pursuant to Section 304(h) of the Federal Act (40 CFR Part 136 – Guidelines Establishing Test Procedures for the Analysis of Pollutants), unless specified otherwise in this permit. **Test procedures used shall be sufficiently sensitive to determine compliance with applicable effluent limitations**. Requests to use test procedures not promulgated under 40 CFR Part 136 for pollutant monitoring required by this permit shall be made in accordance with the Alternate Test Procedures regulations specified in 40 CFR 136.4. These requests shall be submitted to the Section Manager of the Permits Section, Water Resources Division, Michigan Department of Environment, Great Lakes, and Energy, P.O. Box 30458, Lansing, Michigan, 48909-7958. The permittees may use such procedures upon approval.

The permittees shall periodically calibrate and perform maintenance procedures on all analytical instrumentation at intervals to ensure accuracy of measurements. The calibration and maintenance shall be performed as part of the permittees' laboratory Quality Control/Quality Assurance program.

#### 3. Instrumentation

The permittees shall periodically calibrate and perform maintenance procedures on all monitoring instrumentation at intervals to ensure accuracy of measurements.

## 4. Recording Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittees shall record the following information: 1) the exact place, date, and time of measurement or sampling; 2) the person(s) who performed the measurement or sample collection; 3) the dates the analyses were performed; 4) the person(s) who performed the analyses; 5) the analytical techniques or methods used; 6) the date of and person responsible for equipment calibration; and 7) the results of all required analyses.

#### 5. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, or longer if requested by the Regional Administrator or the Department.

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#### PART II

## Section C. Reporting Requirements

## 1. Start-up Notification

If the permittees will not discharge during the first 60 days following the effective date of this permit, the permittees shall notify the Department <u>within 14 days</u> following the effective date of this permit, and then <u>60</u> days prior to the commencement of the discharge.

## 2. Submittal Requirements for Self-Monitoring Data

Part 31 of the NREPA (specifically Section 324.3110(7)); and R 323.2155(2) of Part 21, Wastewater Discharge Permits, promulgated under Part 31 of the NREPA, allow the Department to specify the forms to be utilized for reporting the required self-monitoring data. Unless instructed on the effluent limitations page to conduct "Retained Self-Monitoring," the permittees shall submit self-monitoring data via the Department's MiWaters system.

The permittees shall utilize the information provided on the MiWaters website, located at https://miwaters.deq.state.mi.us, to access and submit the electronic forms. Both monthly summary and daily data shall be submitted to the Department no later than the 20th day of the month following each month of the authorized discharge period(s). The permittees may be allowed to submit the electronic forms after this date if the Department has granted an extension to the submittal date.

## 3. Retained Self-Monitoring Requirements

If instructed on the effluent limits page (or otherwise authorized by the Department in accordance with the provisions of this permit) to conduct retained self-monitoring, the permittees shall maintain a year-to-date log of retained self-monitoring results and, upon request, provide such log for inspection to the staff of the Department. Retained self-monitoring results are public information and shall be promptly provided to the public upon request.

The permittees shall certify, in writing, to the Department, on or before <u>January 10th (April 1st for animal feeding operation facilities) of each year</u>, that: 1) all retained self-monitoring requirements have been complied with and a year-to-date log has been maintained; and 2) the application on which this permit is based still accurately describes the discharge. With this annual certification, the permittees shall submit a summary of the previous year's monitoring data. The summary shall include maximum values for samples to be reported as daily maximums and/or monthly maximums and minimum values for any daily minimum samples.

Retained self-monitoring may be denied to permittees by notification in writing from the Department. In such cases, the permittees shall submit self-monitoring data in accordance with Part II.C.2., above. Such a denial may be rescinded by the Department upon written notification to the permittees. Reissuance or modification of this permit or reissuance or modification of an individual permittees' authorization to discharge shall not affect previous approval or denial for retained self-monitoring unless the Department provides notification in writing to the permittees.

## 4. Additional Monitoring by Permittees

If the permittees monitor any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report. Such increased frequency shall also be indicated.

Monitoring required pursuant to Part 41 of the NREPA or Rule 35 of the Mobile Home Park Commission Act (Act 96 of the Public Acts of 1987) for assurance of proper facility operation shall be submitted as required by the Department.

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## 5. Compliance Dates Notification

<u>Within 14 days</u> of every compliance date specified in this permit, the permittees shall submit a *written* notification to the Department indicating whether or not the particular requirement was accomplished. If the requirement was not accomplished, the notification shall include an explanation of the failure to accomplish the requirement, actions taken or planned by the permittees to correct the situation, and an estimate of when the requirement will be accomplished. If a written report is required to be submitted by a specified date and the permittees accomplish this, a separate written notification is not required.

## 6. Noncompliance Notification

Compliance with all applicable requirements set forth in the Federal Act, Parts 31 and 41 of the NREPA, and related regulations and rules is required. All instances of noncompliance shall be reported as follows:

- a. 24-Hour Reporting
  - Any noncompliance which may endanger health or the environment (including maximum and/or minimum daily concentration discharge limitation exceedances) shall be reported, verbally, <u>within 24 hours</u> from the time the permittees becomes aware of the noncompliance. A written submission shall also be provided within five (5) days.
- b. Other Reporting

The permittees shall report, in writing, all other instances of noncompliance not described in a. above <u>at the time monitoring reports are submitted</u>; or, in the case of retained self-monitoring, <u>within five (5) days</u> from the time the permittees become aware of the noncompliance.

Written reporting shall include: 1) a description of the discharge and cause of noncompliance; and 2) the period of noncompliance, including exact dates and times, or, if not yet corrected, the anticipated time the noncompliance is expected to continue, and the steps taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

## 7. Spill Notification

The permittees shall immediately report any release of any polluting material which occurs to the surface waters or groundwaters of the state, unless the permittees have determined that the release is not in excess of the threshold reporting quantities specified in the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code), by calling the Department at the number indicated on the second page of this permit (or, if this is a general permit, on the COC); or, if the notice is provided after regular working hours, call the Department's 24-hour Pollution Emergency Alerting System telephone number, 1-800-292-4706 (calls from **out-of-state** dial 1-517-373-7660).

<u>Within ten (10) days</u> of the release, the permittees shall submit to the Department a full written explanation as to the cause of the release, the discovery of the release, response (clean-up and/or recovery) measures taken, and preventive measures taken or a schedule for completion of measures to be taken to prevent reoccurrence of similar releases.

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## 8. Upset Noncompliance Notification

If a process "upset" (defined as an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittees) has occurred, the permittees who wishes to establish the affirmative defense of upset, shall notify the Department by telephone within 24 hours of becoming aware of such conditions; and within five (5) days, provide in writing, the following information:

- a. that an upset occurred and that the permittees can identify the specific cause(s) of the upset;
- b. that the permitted wastewater treatment facility was, at the time, being properly operated and maintained (note that an upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation); and
- c. that the permittees has specified and taken action on all responsible steps to minimize or correct any adverse impact in the environment resulting from noncompliance with this permit.

No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

In any enforcement proceedings, the permittees, seeking to establish the occurrence of an upset, has the burden of proof.

## 9. Bypass Prohibition and Notification

- a. Bypass Prohibition
  - Bypass is prohibited, and the Department may take an enforcement action, unless:
  - 1) bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
  - 2) there were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass; and
  - 3) the permittees submitted notices as required under 9.b. or 9.c. below.
- b. Notice of Anticipated Bypass
  - If the permittees know in advance of the need for a bypass, it shall submit prior notice to the Department, if possible at least ten (10) days before the date of the bypass, and provide information about the anticipated bypass as required by the Department. The Department may approve an anticipated bypass, after considering its adverse effects, if it will meet the three (3) conditions listed in 9.a. above.
- c. Notice of Unanticipated Bypass
  - The permittees shall submit notice to the Department of an unanticipated bypass by calling the Department at the number indicated on the second page of this permit (if the notice is provided after regular working hours, use the following number: 1-800-292-4706) as soon as possible, but no later than 24 hours from the time the permittees becomes aware of the circumstances.

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#### d. Written Report of Bypass

A written submission shall be provided within five (5) working days of commencing any bypass to the Department, and at additional times as directed by the Department. The written submission shall contain a description of the bypass and its cause; the period of bypass, including exact dates and times, and if the bypass has not been corrected, the anticipated time it is expected to continue; steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass; and other information as required by the Department.

#### e. Bypass Not Exceeding Limitations

The permittees may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to ensure efficient operation. These bypasses are not subject to the provisions of 9.a., 9.b., 9.c., and 9.d., above. This provision does not relieve the permittees of any notification responsibilities under Part II.C.11. of this permit.

#### f. Definitions

- 1) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.
- 2) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

## 10. Bioaccumulative Chemicals of Concern (BCC)

Consistent with the requirements of R 323.1098 and R 323.1215 of the Michigan Administrative Code, the permittees are prohibited from undertaking any action that would result in a lowering of water quality from an increased loading of a BCC unless an increased use request and antidegradation demonstration have been submitted and approved by the Department.

## 11. Notification of Changes in Discharge

The permittees shall notify the Department, in writing, as soon as possible but no later than 10 days of knowing, or having reason to believe, that any activity or change has occurred or will occur which would result in the discharge of: 1) detectable levels of chemicals on the current Michigan Critical Materials Register, priority pollutants or hazardous substances set forth in 40 CFR 122.21, Appendix D, or the Pollutants of Initial Focus in the Great Lakes Water Quality Initiative specified in 40 CFR 132.6, Table 6, which were not acknowledged in the application or listed in the application at less than detectable levels; 2) detectable levels of any other chemical not listed in the application or listed at less than detection, for which the application specifically requested information; or 3) any chemical at levels greater than five times the average level reported in the complete application (see the first page of this permit, for the date(s) the complete application was submitted). Any other monitoring results obtained as a requirement of this permit shall be reported in accordance with the compliance schedules.

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## 12. Changes in Facility Operations

Any anticipated action or activity, including but not limited to facility expansion, production increases, or process modification, which will result in new or increased loadings of pollutants to the receiving waters must be reported to the Department by a) submission of an increased use request (application) and all information required under R 323.1098 (Antidegradation) of the Water Quality Standards or b) by notice if the following conditions are met: 1) the action or activity will not result in a change in the types of wastewater discharged or result in a greater quantity of wastewater than currently authorized by this permit; 2) the action or activity will not result in violations of the effluent limitations specified in this permit; 3) the action or activity is not prohibited by the requirements of Part II.C.10.; and 4) the action or activity will not require notification pursuant to Part II.C.11. Following such notice, the permit or, if applicable, the facility's COC may be modified according to applicable laws and rules to specify and limit any pollutant not previously limited.

## 13. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the permittees shall submit to the Department 30 days prior to the actual transfer of ownership or control a written agreement between the current permittees and the new permittees containing: 1) the legal name and address of the new owner; 2) a specific date for the effective transfer of permit responsibility, coverage and liability; and 3) a certification of the continuity of or any changes in operations, wastewater discharge, or wastewater treatment.

If the new permittees are proposing changes in operations, wastewater discharge, or wastewater treatment, the Department may propose modification of this permit in accordance with applicable laws and rules.

## 14. Operations and Maintenance Manual

For wastewater treatment facilities that serve the public (and are thus subject to Part 41 of the NREPA), Section 4104 of Part 41 and associated Rule 2957 of the Michigan Administrative Code allow the Department to require an Operations and Maintenance (O&M) Manual from the facility. An up-to-date copy of the O&M Manual shall be kept at the facility and shall be provided to the Department upon request. The Department may review the O&M Manual in whole or in part at its discretion and require modifications to it if portions are determined to be inadequate.

At a minimum, the O&M Manual shall include the following information: permit standards; descriptions and operation information for all equipment; staffing information; laboratory requirements; record keeping requirements; a maintenance plan for equipment; an emergency operating plan; safety program information; and copies of all pertinent forms, as-built plans, and manufacturer's manuals.

Certification of the existence and accuracy of the O&M Manual shall be submitted to the Department at least sixty days prior to start-up of a new wastewater treatment facility. Recertification shall be submitted sixty days prior to start-up of any substantial improvements or modifications made to an existing wastewater treatment facility.

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## 15. Signatory Requirements

All applications, reports, or information submitted to the Department in accordance with the conditions of this permit and that require a signature shall be signed and certified as described in the Federal Act and the NREPA.

The Federal Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

The NREPA (Section 3115(2)) provides that a person who at the time of the violation knew or should have known that he or she discharged a substance contrary to this part, or contrary to a permit, COC, or order issued or rule promulgated under this part, or who intentionally makes a false statement, representation, or certification in an application for or form pertaining to a permit or COC or in a notice or report required by the terms and conditions of an issued permit or COC, or who intentionally renders inaccurate a monitoring device or record required to be maintained by the Department, is guilty of a felony and shall be fined not less than \$2,500.00 or more than \$25,000.00 for each violation. The court may impose an additional fine of not more than \$25,000.00 for each day during which the unlawful discharge occurred. If the conviction is for a violation committed after a first conviction of the person under this subsection, the court shall impose a fine of not less than \$25,000.00 per day and not more than \$50,000.00 per day of violation. Upon conviction, in addition to a fine, the court in its discretion may sentence the defendant to imprisonment for not more than 2 years or impose probation upon a person for a violation of this part. With the exception of the issuance of criminal complaints, issuance of warrants, and the holding of an arraignment, the circuit court for the county in which the violation occurred has exclusive jurisdiction. However, the person shall not be subject to the penalties of this subsection if the discharge of the effluent is in conformance with and obedient to a rule, order, permit, or COC of the Department. In addition to a fine, the attorney general may file a civil suit in a court of competent jurisdiction to recover the full value of the injuries done to the natural resources of the state and the costs of surveillance and enforcement by the state resulting from the violation.

## 16. Electronic Reporting

Upon notice by the Department that electronic reporting tools are available for specific reports or notifications, the permittees shall submit electronically all such reports or notifications as required by this permit, on forms provided by the Department.

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#### PART II

## Section D. Management Responsibilities

## 1. Duty to Comply

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit, more frequently than, or at a level in excess of, that authorized, shall constitute a violation of the permit.

It is the duty of the permittees to comply with all the terms and conditions of this permit. Any noncompliance with the Effluent Limitations, Special Conditions, or terms of this permit constitutes a violation of the NREPA and/or the Federal Act and constitutes grounds for enforcement action; for permit or Certificate of Coverage (COC) termination, revocation and reissuance, or modification; or denial of an application for permit or COC renewal.

It shall not be a defense for permittees in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

## 2. Operator Certification

The permittees shall have the waste treatment facilities under direct supervision of an operator certified at the appropriate level for the facility certification by the Department, as required by Sections 3110 and 4104 of the NREPA. Permittees authorized to discharge storm water shall have the storm water treatment and/or control measures under direct supervision of a storm water operator certified by the Department, as required by Section 3110 of the NREPA.

## 3. Facilities Operation

The permittees shall, at all times, properly operate and maintain all treatment or control facilities or systems installed or used by the permittees to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures.

#### 4. Power Failures

In order to maintain compliance with the effluent limitations of this permit and prevent unauthorized discharges, the permittees shall either:

- a. provide an alternative power source sufficient to operate facilities utilized by the permittees to maintain compliance with the effluent limitations and conditions of this permit; or
- b. upon the reduction, loss, or failure of one or more of the primary sources of power to facilities utilized by the permittees to maintain compliance with the effluent limitations and conditions of this permit, the permittees shall halt, reduce or otherwise control production and/or all discharge in order to maintain compliance with the effluent limitations and conditions of this permit.

## 5. Adverse Impact

The permittees shall take all reasonable steps to minimize or prevent any adverse impact to the surface waters or groundwaters of the state resulting from noncompliance with any effluent limitation specified in this permit including, but not limited to, such accelerated or additional monitoring as necessary to determine the nature and impact of the discharge in noncompliance.

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#### 6. Containment Facilities

The permittees shall provide facilities for containment of any accidental losses of polluting materials in accordance with the requirements of the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code). For a Publicly Owned Treatment Work (POTW), these facilities shall be approved under Part 41 of the NREPA.

#### 7. Waste Treatment Residues

Residuals (i.e. solids, sludges, biosolids, filter backwash, scrubber water, ash, grit, or other pollutants or wastes) removed from or resulting from treatment or control of wastewaters, including those that are generated during treatment or left over after treatment or control has ceased, shall be disposed of in an environmentally compatible manner and according to applicable laws and rules. These laws may include, but are not limited to, the NREPA, Part 31 for protection of water resources, Part 55 for air pollution control, Part 111 for hazardous waste management, Part 115 for solid waste management, Part 121 for liquid industrial wastes, Part 301 for protection of inland lakes and streams, and Part 303 for wetlands protection. Such disposal shall not result in any unlawful pollution of the air, surface waters or groundwaters of the state.

## 8. Right of Entry

The permittees shall allow the Department, any agent appointed by the Department, or the Regional Administrator, upon the presentation of credentials and, for animal feeding operation facilities, following appropriate biosecurity protocols:

- a. to enter upon the permittee's premises where an effluent source is located or any place in which records are required to be kept under the terms and conditions of this permit; and
- b. at reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect process facilities, treatment works, monitoring methods and equipment regulated or required under this permit; and to sample any discharge of pollutants.

## 9. Availability of Reports

Except for data determined to be confidential under Section 308 of the Federal Act and Rule 2128 (R 323.2128 of the Michigan Administrative Code), all reports prepared in accordance with the terms of this permit, shall be available for public inspection at the offices of the Department and the Regional Administrator. As required by the Federal Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Act and Sections 3112, 3115, 4106 and 4110 of the NREPA.

## 10. Duty to Provide Information

The permittees shall furnish to the Department, <u>within a reasonable time</u>, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or the facility's COC, or to determine compliance with this permit. The permittees shall also furnish to the Department, upon request, copies of records required to be kept by this permit.

Where the permittees become aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

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#### PART II

## Section E. Activities Not Authorized by This Permit

## 1. Discharge to the Groundwaters

This permit does not authorize any discharge to the groundwaters. Such discharge may be authorized by a groundwater discharge permit issued pursuant to the NREPA.

#### 2. POTW Construction

This permit does not authorize or approve the construction or modification of any physical structures or facilities at a POTW. Approval for the construction or modification of any physical structures or facilities at a POTW shall be by permit issued under Part 41 of the NREPA.

## 3. Civil and Criminal Liability

Except as provided in permit conditions on "Bypass" (Part II.C.9. pursuant to 40 CFR 122.41(m)), nothing in this permit shall be construed to relieve the permittees from civil or criminal penalties for noncompliance, whether or not such noncompliance is due to factors beyond the permittee's control, such as accidents, equipment breakdowns, or labor disputes.

## 4. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittees from any responsibilities, liabilities, or penalties to which the permittees may be subject under Section 311 of the Federal Act except as are exempted by federal regulations.

#### 5. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittees from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Federal Act.

## 6. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other Department of Environment, Great Lakes, and Energy permits, or approvals from other units of government as may be required by law.

#### not transferable **Virginia Department of Agriculture and Consumer Services** P. O. Box 1163, Richmond, VA 23218

**FERTILIZER LICENSE** 

ISSUED 30-JUN-2020 REGISTRANT NO:

1451

**EXPIRES** 30-JUN-2021

Issued in accordance with application duly executed by the party shown below who has agreed to comply with all applicable laws, rules and regulations and has paid the required fee of \$50.

> **NEW ENGLAND FERTILIZER 400 EAST OFFUTT STREET** CUMBERLAND, MD 21502

Jewel H. Bronaugh, Ph.D.

--- COMMISSIONER -----

Larry M. Nichols

BY\_\_\_\_\_AUTHORIZED-REPRESENTATIVE-

not transferable

Virginia Department of Agriculture and Consumer Services P. O. Box 1163, Richmond, VA 23218

**FERTILIZER LICENSE** 

ISSUED 13-OCT-2020 REGISTRANT NO:

EXPIRES 30-JUN-2021

674300

REGISTRANT NO:

767

Issued in accordance with application duly executed by the party shown below who has agreed to comply with all applicable laws, rules and regulations and has paid the required fee of \$50.

> NEW ENGLAND FERTILIZER COMPANY DETROIT, MI LOCATION STEVE MILLER 9125 W. JEFFERSON AVE. DETRIOT, MI 48209

Jewel H. Bronaugh, Ph.D.

COMMISSIONER

Larry M. Nichols

AUTHORIZED REPRESENTATIVE

Larry M. Nichols

**AUTHORIZED REPRESENTATIVE** 

not transferable

Virginia Department of Agriculture and Consumer Services P. O. Box 1163, Richmond, VA 23218

FERTILIZER LICENSE

ISSUED

13-OCT-2020

30-JUN-2021

EXPIRES

Issued in accordance with application duly executed by the party shown below who has agreed to comply with all applicable laws, rules and regulations and has paid the required fee of \$50.

> NEW ENGLAND FERTILIZER COMPANY KIM BASSILL 97 EAST HOWARD STREET **QUINCY, MA 02169**

Jewel H. Bronaugh, Ph.D.

COMMISSIONER

Larry M. Nichols

**AUTHORIZED REPRESENTATIVE** 

not transferable Virginia Department of Agriculture and Consumer Services P. O. Box 1163, Richmond, VA 23218

**FERTILIZER LICENSE** 

**EXPIRES: 30-JUN-2021** 

REGISTRANT NO: 767

**NEW ENGLAND FERTILIZER COMPANY** KIM BASSILL 97 EAST HOWARD STREET **QUINCY, MA 02169** 

Larry M. Nichols BY\_

AUTHORIZED REPRESENTATIVE

**EXPIRES: 30-JUN-2021** 

not transferable

Virginia Department of Agriculture and Consumer Services

P. O. Box 1163, Richmond, VA 23218

**FERTILIZER LICENSE** 

REGISTRANT NO: 1451

**NEW ENGLAND FERTILIZER** 400 EAST OFFUTT STREET CUMBERLAND, MD 21502

Larry M. Nichols

- AUTHORIZED REPRESENTATIVE -

not transferable Virginia Department of Agriculture and Consumer Services

P. O. Box 1163, Richmond, VA 23218

**FERTILIZER LICENSE** 

**EXPIRES: 30-JUN-2021** 

REGISTRANT NO: 674300

**NEW ENGLAND FERTILIZER COMPANY** DETROIT, MI LOCATION STEVE MILLER 9125 W. JEFFERSON AVE. DETRIOT, MI 48209



## **VA PRODUCT LABEL**

400 East Offutt Street Cumberland, Maryland 21502

## **Econo Grow 3 Fertilizer**

#### **NEFCO Cumberland Dried Biosolids Pellets**

This material is an EPA Class A biosolids product. This product will be used as a fertilizer to be distributed in bulk for agricultural purposes as well as for distribution to fertilizer blenders/manufacturers. The material will not be sold in retail establishments for established lawns in the State of Maryland.

#### Best Management Practices for Handling, Storage, and Use

#### **Personal Safety:**

Please contact NEFCO to receive a copy of the Material Safety Data Sheet.

#### **Restrictions:**

- 1. The treated sewage sludge shall only be transported from the facility to the distribution destination in accordance with the transportation requirement in COMAR 26.04.06.09E (1) and (3)-(6).
- 2. The treated sewage sludge shall not be field stockpiled (staged) or land applied in a manner that will cause an undue risk to the environment, public health, or safety, or in a manner that causes or is likely to cause a discharge of constituents to the waters of the State.
- 3. The treated sewage sludge may be field stockpiled (staged) on the receiving site for fourteen (14) calendar days provided that field stockpiling (staging) is appropriately placed as provided under items (2) and (6) of this label. This authorization shall not relieve the user of the obligation to comply with other applicable State, federal, and local laws and regulations.
- 4. The treated sewage sludge may be field stockpiled (staged) up to ninety (90) calendar days provided that after fourteen (14) calendar days adequate separation from stormwater is provided to prevent leaching or runoff of constituents through the use of a functional, intact plastic cover at least 6 mils thick, or other equivalent cover, arranged so that no significant infiltration of water into the treated sewage sludge can occur during or following rain events.
- 5. The treated sewage sludge shall not be field stockpiled (staged) on the receiving site for more than ninety (90) calendar days unless the receiving site has a separate Sewage Sludge Utilization Permit issued by the Department for storage of sewage sludge.
- 6. The treated sewage sludge shall not be field stockpiled (staged) within 10 feet from a field ditch, or 100 feet from a stream, a drainage system, or other surface water conveyance. Additional unacceptable locations for field stockpiling (staging) include areas where water is ponded or likely to be ponded during a rain event; low areas where surface water accumulates or is likely to accumulate during a rain event; areas where water from a stream that is swollen due to rain contacts or is likely to come in contact with the treated sewage sludge; or areas where the treated sewage sludge will block the natural surface drainage to the extent that it will cause ponding of surface water.
- 7. The treated sewage sludge shall only be land applied on agricultural land in accordance with a nutrient management plan prepared by a certified and licensed nutrient management consultant or a certified operator in accordance with the Maryland Department of Agriculture requirements in COMAR 15.20.04 and in compliance with COMAR 15.20.07 and 15.20.08.
- 8. If the treated sewage sludge stockpiled (staged) at a site is otherwise regulated by an individual or general NPDES Permit, the provisions of that permit will take precedence over Items 2-6 of this label.
- 9. Land application of this product is prohibited except in accordance with the instructions on this label. For any uses not specified, the user should contact NEFCO for information.



## MichiGreen Class A EQ Biosolids Product Label 4 – 1.5 – 0



Slow-Release Fertilizer Biosolids Pellets

This material is an EPA Class A Exceptional Quality (EQ) biosolids product managed in accordance with Michigan Part 24 Rules and the Michigan Environment, Great Lakes & Energy (EGLE), Federal regulations 40 CFR Part 503, applicable State laws, and the instructions on this sheet.

	ANALYSIS	GUARANTEED
	Total Nitrogen (N)	4.0%
	Available Phosphate (P <sub>2</sub> O <sub>5</sub> )	1.5%
	Soluble Potash (K₂O)	0%

Derived from Biosolids

## Best Management Practices & Regulations for Handling, Storage, and Use

#### Personal Safety:

Please contact New England Fertilizer Company to receive a copy of the Safety Data Sheet.

#### Storage:

- 1. Storage locations shall be on level areas to minimize surface water contact.
- 2. Storage locations shall follow the isolation listed below in the utilization section.
- 3. Product should be kept dry and recommended to be covered while stockpiled to minimize rewetting and blowing.
- 4. Product should be stored in a location with low potential for human and pet contact.
- 5. Product should be utilized within 21 days or covered for storage.

#### **Utilization:**

- 1. Product should be applied at agronomic rate. One ton of biosolids pellets equals 28 pounds of available nitrogen.
- 2. Avoid spreading on windy days or when wind is blowing toward populated areas.
- 3. Recommended to spread in the morning when air begins to warm and is rising, rather than in late afternoon. Wind will dissipate and dilute odors, while hot and humid weather tends to concentrate and intensify odors, particularly in the absence of breezes.
- 4. Mark required setbacks with flags or visible indicators is suggested to ensure the generator or applier does not apply biosolids within an unacceptable distance of waterways, residences, wells, or commercial buildings.
- 5. Avoid spreading on weekends/holidays when people are likely to be engaged in nearby outdoor and activities.
- 6. Avoid high-speed spinning spreaders to broadcast material, this may increase dust. Use spreaders at low speed.
- 7. Product should not be applied in diversions, drainage ditches, gullies, non-vegetated swales, ravines, or on bedrock outcrops to prevent runoff from carrying into any surface waters.
- 8. Product should not be applied within the following isolation distances:

	Incorporated	Top-dressed (surface application)
Municipal Well (Type I & IIA)	2000'	2000'
Non community public water supply (Type IIB & III)	800'	800'
Domestic Well	100'	150'
Homes	100'	150'
Commercial Buildings	100'	150'
Surface Waters	50'	150'
Groundwater	30"	30"

Generated By: New England Fertilizer Company 9125 W Jefferson Ave Detroit, MI 48209 (313) 551-5278 Delivered in Bulk



# Econo Grow **4-2-0**Slow-Release Fertilizer

## **Guaranteed Analysis**

Total Nitrogen (N)	4 %
3.7% Water Insoluble Nitrogen	
0.3% Water Soluble Nitrogen	
Available Phosphate (P2O5)	2 %
Soluble Potash (K2O)	0 %
Calcium	2 %
Iron	2 %
pH	~6.8

Econo Grow is a US EPA "Class A, Exceptional Quality Product" Plant nutrients derived from: processed biosolids (activated sewage sludge)

# Manufactured By: New England Fertilizer Company 97 East Howard Street Quincy, MA 02169 617-376-2500

Product should be applied at an agronomic rate taking into account the nutrient demands of the crop, recognizing the nutrient balance of 4-2-0 for nitrogen-phosphorus-potassium. Recommended application rates for turf are one ton for every 2.5 acres.

Like all fertilizers Econo Grow should:

- Be applied in a manner which prevents runoff to surface waters
- Be applied no closer than 100 feet to any public or private water supply
- Not be applied to flooded or frozen lands
- Be stored in a dry place
- Be kept out of the reach of children and pets

Land application of this product is prohibited except in accordance with the instructions on this label. For any uses not specified, the user should contact NEFCO for information.